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Janine Elliot

Ian Ringstead

Dominic Marsh

Linette Smith

MUSIC REVIEWS John Scott

James Fleming

Stuart Smith

ADVERTISING SALES Linette Smith

WEBSITE www.hifipig.com

E.MAIL Stuart@hifipig.com

TELEPHONE +33(0) 297237078

2017 has been an interesting year for us at Hifi Pig. We've travelled all over to bring you news of shows and new products and we've worked hard to bring you news and reviews of the latest products from around the World.

2018 promises to be busier than ever and we've got a few surprises up our sleeves for readers including a new look magazine that will be launched at the start of February;

Can I, on behalf of the whole Hifi Pig team, take this opportunity to thank you for your continued support and enthusiasm for Hifi Pig.



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HIFI REVIEWS

[AVM Inspiration CS2.2](#)

[Leema Acoustics Tuscana II Integrated Amplifier](#)

[Triple M Icon Smart TVC Preamplifier](#)

[MUTEC MC-3+ Smart Clock USB \(Master Clock/Reclocker/SPDIF Converter\)](#)

[Kralk Audio Elite Mk 2. Loudspeakers](#)

[Arcaydis EB1S Standmount Loudspeakers](#)

[Tannoy Revolution XT8F Loudspeaker](#)

[Göbel Lacorde Statement USB and Ethernet Cables](#)

[MCRU No. 75 Mains Cable](#)

[Black Rhodium Stream Power Cable](#)

[Sbooster Best of Two Worlds Power & Precision ECO \(BOTW\) Power Supplies](#)

[Hifiman HE-400S Headphones](#)

[Kralk Audio KALSU Loudspeaker Set Up Device](#)

[Solidair Audio Ukishima Magnetic Isolators](#)

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AVM Inspiration CS2.2

By Dominic Marsh

Costing £3995 the AVM Inspiration CS2.2 packs a lot under the hood. It's a streamer, a CD player, DAC, FM radio, Internet radio player, it has an on-board MM/MC phonostage and outputs a healthy amount of power. For those looking for a one box plus speakers solution it looks the business, but does it cut the mustard? Dominic Marsh finds out

AVM Inspiration CS2.2



The AVM Inspiration CS2.2 is one of many compact “all in one” units found on the market today. The trend seems to be driven by a desire for people to be living in more and more cramped spaces in housing becoming less spacious, or people don’t want a heap of boxes sat in a rack and cramping their lifestyle choices. The word “compact” though conjures up images of cheap parts shoehorned into a small box, beset by a huge list of compromises to achieve that goal and with a sound quality ranking just above the standard of a portable transistor radio.

Just one look and touch of the AVM Inspiration CS2.2 tells you to take all your preconceptions about that word “compact” and erase them entirely from your mind. AVM haven’t just helped you to get rid of that pile of boxes, they have redefined what “compact” should signify, with a price tag approaching four thousand pounds that forces you to treat it with some serious reverence.

Construction

You can tell instantly that this is a German designed product, with stunning attention to details, like the chassis and cover fitting together perfectly, the way the volume control glides rather than merely rotates, the buttons having a tactile presence to them. As BMW are obsessive about shut lines on their vehicle’s doors, bonnets (hood) and boots (trunk), so too I would imagine someone on the AVM production line is checking the accuracy of fit and finish before it leaves the factory.

Within said compact box is a powerful Class D amplifier with a rating of 165 watts into an 4 ohm load, a slot loading CD player, an FM only tuner with RDS, a DAC, a phonostage with MM & MC input, a dedicated headphone amplifier, Bluetooth receiver and internet streaming facility. There is no DAB radio fitted, but there is an internet radio streaming facility. There is full support for Qobuz and Tidal. Streaming-wise it will work with all the usual suspects (MP3, WMA, AAC, OGG Vorbis, FLAC, WAV, AIFF) and upsamples these to 192/24.

With all that functionality on tap, the front panel controls are rather sparse, but don’t let that fool you for one moment, as the 5 push buttons beneath the display take you through a menu system that is pretty much comprehensive, but navigating down through the menu layers is logically arranged, something that can’t be said of some products. This is one occasion where sitting in front of the unit with the user manual to hand helps to unravel the menu system easily. Aside from the display and menu buttons, we find source selection, a power switch, rotary volume control, the slot entry for the CD player and a 3.5mm headphone socket.

Around the rear though is where the business end of this machine’s skills lie. Reading from left to right, there is an FM antenna plug connection, then a pair of RCA sockets for phono connection, 3 pairs of RCA sockets for line level analogue inputs, then a pair of fixed line level analogue output RCA sockets, then a variable level pre-amplifier output pair, then a USB socket for firmware/software updating, then digital inputs consisting of an RCA socket and a TOSLINK connection and a matching set of digital outputs. Back to the left and on the bottom row now we see a ground connection post for the phono connection, then an RJ45 LAN connection, then a USB socket so you can add a hard drive, then two buttons for Update and Reset accordingly, then the Bluetooth antenna. Finally, we find two pairs of loudspeaker connections, but in a BFA type format only. If your speaker cables are blessed with 4mm banana plugs then you have no worries, but

For such a “compact” unit, it produced a big, solid, powerful sound which got my attention, more biggerer, more soliderer and more powerfuller than my resident system’s sound

AVM Inspiration CS2.2

those that have bare wire or spade connections will need to have new cables or existing cables reterminated. At the far right hand of the rear panel there is the mains power switch and an IEC inlet. So, connectivity-wise AVM seem to have pretty much every area covered and whether you are looking to stream from a NAS or a hard drive, or use more conventional media you are well catered for. The line level inputs allow you to add other external sources should you wish and I would imagine many will use one of these pairs for improving the sound of their televisions.

AVM have also created an app you can download from their website onto your mobile device to control all the functions of the Inspiration CS2.2. A remote control handset and charging dock is an optional extra.

Sound Quality

Being the very busy Hifi Pig Reviewer that I am these days, I unpacked the CS2.2 from its box and connected some mains to it, discovered that my speaker spade connections are not suitable, so a dig around in the trusty spares drawer and produced a pair of Tellurium Q Ultra Blue cables with 4mm banana plugs fitted that I keep for eventualities such as this. All connected up I pressed the power button but simply ignored

what it was doing because my mind was concentrating on other things at the time and that included reading the user manual, or indeed studying the specifications.

I then faced the prospect of inserting a CD into the slot loader and I will admit I had rather a nervous moment. I do distrust, rightly or wrongly, slot loading CD mechanisms as two previous players (not from AVM I hasten to add) in for review had these things installed and both times my CD went in and didn't come out voluntarily, plus car CD players have the same trick up their sleeve unfortunately, so they don't have an unblemished reputation with me. What the heck, it either makes the third instance for the hat trick or swallows and plays the CD, so it was gamble time. Without even looking, I reached across to the CD rack and pulled one out at random from the bottom shelf – the same shelf were all the blind purchases should have remained blind, as in bought from charity shops for £0.99p, boot sales for £0.10p, or a token punt from someone's ecstatic recommendation. "Oooh, you MUST buy this CD Dominic, it's superb" to find in reality it's not to my tastes at all, not even close. An ideal sacrificial candidate then for a potentially recalcitrant slot loading player. In it went so gently and so smoothly, I ejected it and loaded it again with the same result, so I gave the AVM immediate

absolution and it worked flawlessly for the duration.

The CD was called "Red Hot and Cool" a compilation CD given away free with some magazine or other, the first track being Moby's 'Why Does My Heart Feel So Bad' no less. Suddenly the AVM went from number four in the list of my priorities, straight up to number one instantly. For such a "compact" unit, it produced a big, solid, powerful sound which got my attention, more biggerer, more soliderer and more powerfullerer than my resident system's sound. Dominic was more than impressed. Well he was until he downloaded the app from the AVM website and despite many attempts I could not get the CS2.2 paired up to my mobile phone. After a lot of head scratching I came to the conclusion that my phone didn't have sufficient free memory to operate the app. Great pity, as the app purportedly controls every single function of the Inspiration CS2.2, so I had to make do with getting up off my backside and operating it manually.

I then dug out the user manual and read it from cover to cover, where I discovered this isn't a weedy little 30 watts per channel amplifier that sounds like banging a dustbin with a stick, this was a hefty 165 watts per channel of Class D amplifier throbbing away inside that compact box. No wonder it sounded as powerful as it did. It also didn't



AVM Inspiration CS2.2



suffer from the typical Class D sound either, which can sound dry and unpolished, lacking in warmth and emotion. I couldn't fault the sound I was hearing and very soon I had dropped from my mind that this was a Class D amplifier I was listening to.

Naturally, I had to play my reference recording of Fink's "Wheels Beneath My Feet" album to see where if any shortfalls in performance were. I was on a fruitless quest there, as the AVM gave a stunning performance that matched, if not eclipsed, many a big grown up separates system. The floor tom whacks the drummer inflicts on his drum kit during the track "Sort of Revolution" was delivered with awesome power and control, fair made my listening room vibrate I can tell you. Each one of my benchmark points in this album was passed with ease and I heaved a huge sigh of relief when the CD player ejected my CD without any fuss or drama. I believe the drive unit is made by TEAC which is a good indicator of build quality.

The quality of sound emanating from this box of tricks was equally impressive and consistent whatever the source of the music and the inclusion of the very able phonostage is a boon for those already on, or looking to jump on, the vinyl bandwagon.

The Class A headphone amp is also a very neat feature for late night listening and sounds on a par with the rest of the system.

Conclusion

Well, after having initial mixed expectations from this small compact box, those perceptions quickly vanished. It is a beautifully built, very well specified and great performing unit as befits the AVM label.

It isn't cheap by anyone's standards and asking people to shell out just short of four thousand pounds is up to AVM to justify. If however you consider that buying the separate units to make up the equivalent functions and with this level of performance would be well in excess of four thousand pounds, plus you are back to a rack full with

17 inch units which you didn't want to begin with.

For those looking for a great sounding, feature packed and pretty much future proof all-in-one then this one ticks all the relevant boxes.

AT A GLANCE

Build Quality: Superb.

Sound Quality: Sweep your preconceptions about "size" aside, this is a top performing device.

Value For Money: If you can afford it, then don't hesitate.

Pros: Fine build, great sound and more than enough features built in as standard.

Cons: No remote control handset as standard.

Price: £3,995.00

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Leema Acoustics Tuscana II Integrated Amplifier

By Dominic Marsh

Based in Wales Leema has a great reputation for designing and building electronics to suit all pockets. Dominic Marsh takes a listen to their Tuscana II Integrated amplifier costing £3,995

Leema Acoustics Tucana II Integrated Amplifier



I recall having evaluated some Leema products before for Hifi Pig, namely their Elements integrated amplifier and Libra DAC. I gave them both a "Recommended" award as I remember, because although they performed very well during the evaluation, they never managed to hit me personally on the emotional level and I struggled to make that connection with them, because they didn't have that elusive X Factor that would have had me enchanted and utterly enthralled. Maybe it is the ex-BBC origins of the company founders that was responsible for the design brief to be that way, maybe yes and maybe no and life is too short to hang on to imponderables such as that.

That situation was about to change when I was sent their Mark 2 variant of their Tucana integrated amplifier and my perception of the marque was to be changed instantly.

Construction

Like all other Leema electronics, the Tucana II is built like the proverbial out-house and there is nothing at all flimsy or cheap in its build quality. Ergonomically too it is an absolute peach to operate, with all controls and indicators working flawlessly and reliably too for good measure. I particularly loved the volume control with its circle of LEDs to indicate the exact setting. Not the approximate setting mind, but the EXACT setting, which I will explain in due course, but I will say it is just about the best I have found on a modern amplifier with a digital volume control.

Outwardly, the new Tucana II amplifier looks no different to its predecessor, with the same machined alloy front panel, the large rotary volume and source selector knobs, plus various LEDs to show function selection and volume settings. However, Leema say the Mark 2 has had circuit changes and higher specification components fitted to improve sound quality.

Taking a tour around the physical aspects then, to the left of the volume control we find two 3.5mm sockets for headphones connection and MP3 signal input, then to the right of the volume control we find the infra red remote control window, then to the centre of the front panel we find a series of four illuminated push switches labelled "GAIN", "BAL", "MUTE" and "TAPE". To the right we have a set of seven illuminated push buttons for source selection, labelled "BALANCED", "CD", "TUNER", "AUX", "MULTI 1", "MULTI 2 / MP3" and "AV DIRECT". Finally, we find the mains power/standby button which has a blue LED which illuminates in standby mode, which thankfully isn't too bright in ambient light although it throws quite a pencil beam across the room as I discovered one night when I went into my darkened listening room for a pair of glasses and didn't switch any lights on.

To the rear we find reading from left to right, a pair of loudspeaker binding posts for the right hand speaker, then two LIPS sockets which connects to other Leema products with the same connections for system control, then a mains IEC inlet socket, then a pair of balanced XLR input sockets, then below these connections we find a row of single ended RCA sockets labelled "TAPE" (input and output), "AV", "MULTI 2" and "MULTI 1", "AUX",

The common thread throughout the review no matter what speakers were partnered with the Tucana II was how powerful and how enjoyable it is to listen to and this particular breed of amplifier is fairly rare

Leema Acoustics Tucana II Integrated Amplifier

"TUNER" "CD" and "PRE OUT". Finally there is another pair of loudspeaker binding posts for the left hand speaker.

I found the external appearance very refreshing in not being the same boring rectangular box with knobs on, as it was running outwith of the herd and instantly recognizable as a genuine Leema product.

Sound Quality

Press the standby button on the front panel and the amplifier begins its powering up routine. The LEDs surrounding the volume control flashes several times and the volume resets to a low level.

With a specification reading of delivering 150 watts per channel in to 8 ohms and 290 watts into 4 ohms it would suggest a powerful amplifier and so it proved to be during the listening sessions with various speakers that partnered with the Tucana II.

In one word I would describe it as "muscular", but not in a brutish way at all and you could liken that level of power with a champion bodybuilder, in that you wouldn't start a fight with him as you know you would lose before you began and him knowing his own strength so he doesn't have to prove it to anyone, least of all you. Just measure his biceps and be very nice to the man.

That solid power of course manifests itself in bass output, whereby a drum sounds like a drum at close range, losing none of the heft and power that's there. My resident power amp at the time (since changed and not because of the Leema may I add) was rated at 140 watts per channel, but it easily lost to the Leema unit in the way the power was delivered, with a firm depth of solidity that was lacking in my own amplifier. Both amps could deliver the "punch in the guts" power from a kick drum beat, but the Leema took that one stage further by allowing you to hear what the drum skin and shell was doing, plus whether a hard or soft beater was being used.

With the arrival of a pair of Audiovector SR3 Avantgardes for review at the same time, this was a pairing that just HAD to happen. I had a brief hearing of these speakers at the 2017 Bristol Hifi Show being driven by a compact Exposure system. During this particular visit to the show I had lurking in my prized Hifi Pig pink shoulder bag some of my own CDs in the hope some exhibitors could tear themselves away from their library of specially selected plinky plonk music and give my offerings a whirl. Of course, I had in my bag Fink's "Wheels Beneath My Feet" album which I was itching to be played and the results I heard at Bristol were nothing like what I was used to at home with the exception of one room, the Exposure room using the Audiovectors. That began my

quest to review a pair of these speakers and happy to say Audiovector were more than happy to oblige, so look out for the full review of these speakers soon in Hifi Pig Magazine.

The Leema Tucana II amplifier and the Audiovector SR3s were a very sweet listen indeed. Notice I use the word "sweet" here and they were a joy to listen to. Smooth flowing, very powerful and yet highly controlled, bass in particular was a solid as a brick wall, completely unshakeable in fact. I never once found the sound lacklustre or laid back either let me add, this pair didn't fatigue either and I could listen for many hours and be completely absorbed by the sound. The very top end treble didn't have the clarity and dynamics for my own personal listening preferences, but I do know many of our readers intensely dislike sharp defined treble registers, so if you belong to this group of people, then be heartened in the knowledge this pairing would please you tremendously.

As an add-on to this although not entirely relevant to this review, I then bought a Lyngdorf power amp with 200 watts on tap and the bass sounded decidedly off with the Audiovector Avantgarde SR3s. This hifi caper has it's inexplicable quirks at times.

Another pair of speakers in for review was a pair of hORNS Aria 1 speakers, so it would be rude not to harness them to the Leema amplifier as well while they were here. In my resident system, the hORNS had a rather



Leema Acoustics Tucana II Integrated Amplifier



subdued bass offering, with sublime treble and midrange which more than compensated for that. Paired to the Leema amplifier though, the bass registers certainly perked up a fair bit, producing a better balanced sound from top to bottom ends of the spectrum. Synergy at play here methinks and I would say that the bass softness of the Arias were better matched to the strong power delivery traits of the Leema amplifier.

I also have a pair of Roksan TR5 speakers here and they too were connected to the Leema amplifier. I was amazed that out of the 4 pairs of speakers connected to the Leema, these were the best balanced out of the 4. Neither bass nor treble dominated proceedings and they managed to walk that fine line between exciting and dynamic and overblown and overpowering. This meant you could enjoy an extended listening session without becoming jaded or fatigued.

Then we move on to my current resident speakers, the Pylon Diamond Monitors I reviewed earlier this year for Hifi Pig and had to have after hearing them in action. These speakers deserve the epithet "Monitors" and really do live up to their name. They are fast, dynamic, insightful and tuneful, with a bass output that you wouldn't expect from a box of their relatively small size and they easily ousted my then floor standing speakers with ease. The best thing about these speakers is they are a great reviewing tool as well, because what you feed into them is very clearly heard, warts and all. When plumbed up to the Leema Tucana II amplifier, the

character of the Leema changed completely.

What perked up the hORNS speakers and was "sweet" with the Audiovector SR3 Avantgardes was no more, instead I got a lively and punchy amplifier with a tremendous amount of accuracy and refinement in the midband and treble region.

I love these speakers because of their in your face bite your shins kind of presentation and they pull no punches which I personally adore, but may not be to other's tastes. As with the hORNS Aria 1 speakers the Leema amplifier addressed and married well with the speakers, whereas with the Pylon speakers it was the other way around in my perception with the Leema Tucana II, is a prime case of ripping of the sheep's clothing and finding the wolf hiding underneath. Top stuff.

Ah yes, I did mention earlier in the review about the design and ergonomics of this amplifier didn't I? I must commend Leema on the way the amplifier is put together and in particular the controls and functions. The digital volume control is an absolute peach in operation, perfect in linearity, perfect in accurate setting both by the front panel rotary control and the remote handset, perfect in the way it lets you the owner know exactly what the setting is by the LEDs surrounding the volume control. Well done Leema and you have set a new benchmark test by which others are going to be judged by me in future. As well as rear panel power switches that bug me, I hate with a passion any volume control that needs the skilled hands of an open heart surgeon to get an accurate volume setting.

Conclusion

With such a mixed bag of results to deal with, it would be easy to jump to the wrong conclusions and steering well away from that situation is what I enjoyed most about reviewing the Leema Tucana II amplifier.

Paired with different speakers the sound was indeed "different" but not in a negative way of course just – different, which when it finds the right buyer with the right partnering equipment it should be a match made in heaven. The common thread throughout the review no matter what speakers were partnered with the Tucana II was how powerful and how enjoyable it is to listen to and this particular breed of amplifier is fairly rare.

If you have owned an amplifier with a non-linear hair trigger volume control, clunky noisy switches, dull rectangular flimsy casework and clunky noisy switches, then you will be highly appreciative as I was that at least one company can get it right. In actual fact if I ever wanted to forsake my pre and power amplifier pair and revert to an integrated amplifier, then the Leema Tucana II would in all likelihood be a strong favourite because of its very fine sonic abilities and awesome build quality. However, I would not make that decision until I have heard it with the speakers it is going to be living with and that extends out to whoever is also about to make that choice.

I give it a highly, highly, highly recommended nomination, as I think it justly deserves it.

AT A GLANCE

Build Quality: In the price band the Tucana II occupies, it is class leading by a country mile.

Sound Quality: With the right speakers it can dance and sing.

Value For Money: I can easily see this as a long term keeper amplifier, so will save money during its lifetime by not "upgrading". The build is worth every penny on its own.

Pros: Superb build and sonic attributes make this a must audition product.

Cons: "Fussy" isn't the right word in the context of speaker pairing. Responsive to different speakers, so matching must be taken into account before purchase.

Price: £3,995

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Triple M Icon Smart TVC Preamplifier

By Janine Elliot

Triple M Icon Smart TVC Preamplifier is handmade in the North of England and has a lot of features for a £1499 preamplifier. Janine Elliot takes a listen

Triple M Icon Smart TVC Preamplifier



In terms of features and originality it is in many ways an outstanding product and well worthy of your attention

I love TVC (Transformer Volume Control) passive preamplifiers; a transparent sound with no worry about a resistor based volume control affecting the music at different sound levels (particularly at lower volume). A conventional preamplifier will have an electronic circuit which will add noise (hiss) and depends very much on your power supply being good. Conventional resistive loaded preamps can cause impedance mismatching between source and power amplifier, but with a TVC/AVC design the input impedance matches the output impedance. My own reference TVC preamp has been my Baby Reference by Music First Audio for a while now. The idea of passive preamplifiers has been around since the Western Electric's 5-position inductive auto transformer used on their Type 7A-Amplifier in 1921, and reappeared notably just before the start of the 21st Century when the higher output level from CD players meant that enough volume would actually get to the power amplifier without the need for a step-up pre-amplifier.

Similarly, the idea of a volume control being a series of rotary switches has also been around for many, many years. The BBC type A and B mixing desk from the 1940's that I used at the World Service in the 1980's had the main monitoring volume control as a series of resistors, one on each "position" on the volume control, though the mechanics meant that switching up and down often meant for noise clicks and worrying silences. Even today's passive TVC's can result in breaks in sound between positions or worse, crackles and an audible stepped change in sound level as it is turned. Conventional passive volume controls can also limit you to 20-31 different level settings, which can mean many work at greater than 2dB changes at the lower end of the scale and with perhaps only those at the top at 1dB (the point at which discrete changes in sound level aren't so easy to detect). This would mean getting the exact level you need for comfortable listening might not be so exact. What makes the icOn from Triple M Audio different is the use of micro reed relays. By using reed switches to change volume settings there are many more incremental changes in sound levels, a total of 45 of which 39 are at 1dB, which means volume adjustment will be smoother, and importantly allows it all to be operable by a remote control. The volume control on the front is no longer a physical heavy switching unit, rather an infinite and smooth device, and can now be used for other purposes as well, including as a balance control, which might be useful. As level switching is carried out using high quality industrial grade and hermetically sealed reed relays the possibility of those contact errors on conventional open rotary switches is eliminated, though as I point out later, there are still noises turning level up and down, as reed relays still take a very short time to "switch" on/off. In the past being passive has meant that apart from choices of inputs and outputs there is little else you can do other than select and listen. What the icOn Pre provides is a lot more facilities at a very favourable price. Whilst the audio stage is passive, electrical circuits control the operational and selection features as well as the screen, via an external 5v generic power adaptor, working an inbuilt Arduino computer.

This new British product is manufactured in Manchester by the Hungarian born Pal Nagy who likes to describe himself as a 27 years old humble electrical engineer with 57 years' experience in his backpack. He certainly has lots of youthful energy creating something totally unique and with many other really exciting ideas in his backpack which, no doubt, we will be experiencing soon. He started his engineering life in Hungary in the 80s,

Triple M Icon Smart TVC Preamplifier

developing high-tech professional measuring equipment such as FFT analysers and DSP based military gear. After ten years he left his engineering job for different management positions in the IT industry, then turned to a new world of natural therapies, meditation, mind techniques and established a small company selling online health and wellness related products. 4 years ago he and his wife moved to UK from where his ventures in audio began, starting up Triple M in 2016 with his mentor and friend Gary Gardner.

This black finished aluminium preamplifier permits operations and functions to be controlled either from the front knob or via the supplied Apple remote control. This includes selecting of sources (including a tape loop should you need that) and being able to adjust levels between them. There is nothing worse than changes in level between sources when you switch from one to another. These differences could be as much as 20 dB (assuming 200 mV for a tuner or phono and 2000 mV for a CD player or DAC). Pal likes to suggest this smart function will protect the owner's ears as well as the precious loudspeaker drivers. All level changes are done passively, so no worries about noisy electrical circuits. Other comfort features include programmable maximum volume, the step size and the starting volume. A 4cm x 5.6cm TFT screen (which can be programmed to be visible in a choice of different colours – I chose green) means you can see exactly what you are doing from the comfort of your armchair, all operated via an Arduino based amplifier system and an Apple remote control. The Triple M iCon is available in two versions; the Quartet (4 unbalanced inputs) and Octet (two balanced and 6 unbalanced inputs and balanced/unbalanced output), at their introductory prices of £1499 and £1999 respectively. The single knob on the front panel can be used to change level or balance, and via a Morse-code type function, by pressing in rapid or long succession to get to varying functions on the machine. For example “...” will turn on or off the tape monitor and “.” will turn on sleep function. Even the screen can be turned to night mode (not so bright) by communicating “.”. A photo sensor will adjust the brightness dependent on ambient light levels. Pressing for 3 seconds at start-up will enter the set up mode to change levels of sources etc.

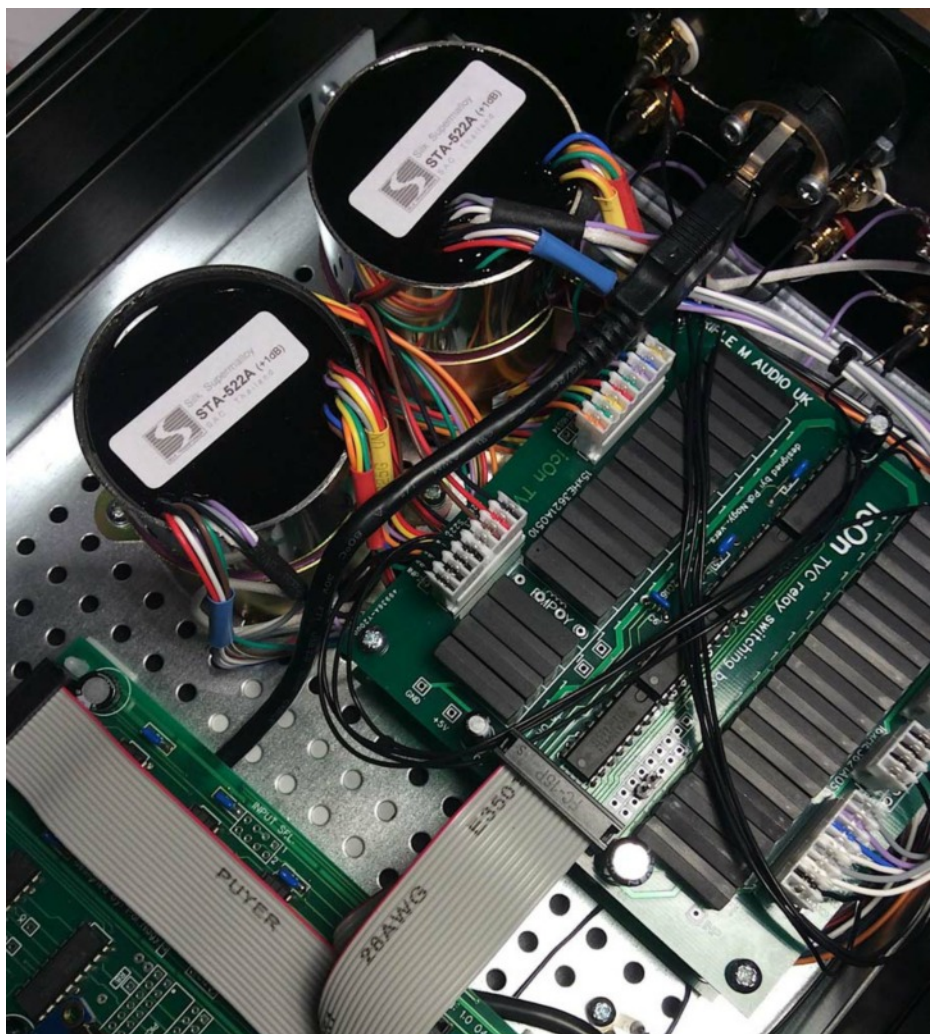
Features on this new product make my own prized TVC preamplifier quite archaic, and indeed the idea of producing something so advanced was the inspiration for Pal designing the iCon. “Out of the blue one day unexpectedly I was curious about the possibility to create good sound AND smart

features matching a microprocessor with an old school TVC”. Pal had a lot of help and encouragement from mentor and friend Gary Gardner, the two of them spending hours daily chatting online about the design. The company name ‘Triple M’ refers to Gary’s pet phrase “Music Matters Most” and ‘iCon’ is Pal’s aim to create something iconic. He certainly wants to create products that are unique, and explained some unique ideas including a future model with voice operated control. He told me “this existing first version will get a firmware upgrade soon with blind A/B test feature for golden ear audiophiles who love to compare interconnects, DACs, etc”, which could be very useful for HifiPig reviewers, then. Rather than just accepting the inconveniences and limitations in hi-end audio equipment he is on a crusade to address and perfect them. The Smart iCon has a USB link on the rear to update software, and purchasers of the unit will receive updates as and when they happen.

Whether some of the cost of the technology employed in this unit could have been used for upgraded components, depends on whether you want another “same as” product or something as unique as this. I think this is an amazingly well thought out unit and answers many of the questions from prospective passive preamplifier customers.

Note the recent spate of remotely operated motor-driven passive preamplifiers. This does the same, but in a very different way, and with so much more possible.

The unit can be bought with an add-on of an anti-resonant transparent acrylic base attached to the base of the icon that lights up with a strip of LEDs capable of 16 million different colours, changing from blue for low level to violet for medium and fiery red for high setting. Pal’s love of lighting to supplement the music ties in well with his earlier career on the human mind and particularly his work on the Ganzfeld technique, selling a light mask that you put over your eyes and which shines or strobes a palette of bright blue light whilst you listen on headphones to relaxing Tibetan or binaural heartbeat music. He kindly sent me one to try during my review and in around 10 minutes I felt a little more relaxed and able to take my mind off writing this review. Oops. The process is supposed to get your mind to produce theta brainwaves which flourish between the waking and sleeping state of daily life. The mask certainly gets warm and was very relaxing. Perhaps a review on this for Pig at a later date.



Triple M Icon Smart TVC Preamplifier

The heart of any TVC preamplifier is the coil. The two coils are custom-made for them by SAC of Thailand, since Pal needed it to operate in 1dB steps, rather than their standard transformer which operates in 2dB steps. It uses OFC copper winding with silver-plated/Teflon coated connecting wires, and a Supermalloy core. Those remembering cassette tape heads will recall the different manufacturers vying for the best head whether it was Ferrite, Sendust, Permalloy or Akai's "Glass Crystal Ferrite". The name Permalloy is due to it being 80% nickel-iron alloy and with excellent permeability (the degree of magnetization of the material in response to a magnetic field), and the "Super" being better. The choice of material for the coil also affects the sound; the Radiometal offering better detail at low levels and better speed and extended higher frequencies. The SAC coil also has an impressive total primary inductance up to +1,100 Henry and channel imbalance of less than 0.05 dB. The unit comes supplied with an Apple Remote, a product becoming increasingly popular by those needing a remote but don't want to actually manufacture their own, and one that is also good looking. Also packaged are four shorting RCA plugs for controlling crosstalk and noise on any unused channels. A lovely thought.

The unit is of good build quality and looks, all the more exciting by the TFT screen on the front of the black aluminium unit. An on/off switch was on the left of the review model, rather than on the rear as illustrated on the website. To the right of the screen is the single knob that operates all commands if you don't use the remote. This is a non-motorised knob so it doesn't move as you alter level on the remote. The rear of the Quartet is full of good quality components and with a well laid out internal circuitry. It has 4 RCA line inputs (the display shows 'input one' as a turntable input, though of course you will need to add a phono-stage if you do intend it to be for vinyl input.) As well as RCA unbalanced output there is a 12v trigger socket, the USB socket and a switchable input ground so that you can combat hum or ground loops, plus chassis ground connection. This preamp is also unique in that it offers the choice of AVC or TVC operation, so in AVC (Autotransformer Volume Control) mode the input ground will need to be "ON" since only the secondary coil is used in this mode, with the primary coil not forming part of the audio path. In this mode, though, the silver shorting RCA plugs need to be connected to the monitor input, which Pal informed me will reduce the inherent "ringing effect" of transformer designs. The addition of tape in/out however

gave me a chance to get historical and connect up my aged Akai GXC75 cassette recorder. Ever so often I like to connect up an aged source of music and as I hadn't played cassettes for many years, today was a good opportunity to test the tape in/out function. Whilst I might not have a Dragon in my house with its automatic azimuth adjustment, my cassette recorders were always optimally set up, and playing an old favourite Focus album "In and out of Focus" the sound was remarkably stable and not itself showing signs of needing to adjust the head to focus the sound and get better top end. The music was surprisingly engaging from such a temperamental medium. Hard to think that in 1980 cassette sales were higher than vinyl, and that today cassette sales are starting to rise. For the all-important listening sessions I turned to DAP and to vinyl via my Manley phono-stage. Power was provided by a Krell KAV250a.

The Music

A nice thought was the personalised message to me on the start-up menu on the TFT screen as I switched on the unit for my review. What a lovely idea if he were to do this for every purchaser, and makes a lovely alternative to a personalised top or face plate, which a few manufacturers do offer (at additional cost!) It made me smile when I first turned on the unit. After a quick listing of the "dot dash" Morse codes to assign functions (it doesn't show for very long, but all is explained at your own pace in the instruction manual downloaded from the website) and I can start to do the all-important listening. The Apple remote is a lovely minimalist device, making operation easier, and once you get used to which button operates which function you are good to go. All buttons operate as illustrated on the Apple remote, with the play/pause button programmed to mute the preamp (which is actually the same as playing and pausing the sound, so no confusion there). Left/right buttons changes channel or alters balance and up/down turns the volume up and down. The central button on the remote can either change source or switch between TVC and AVC mode. After an initial software issue on selecting Source One on the review sample, I was good to listen, and wow did it impress. As mentioned, the unit comes supplied with shorting plugs which help to ensure noises and crosstalk don't intrude on what is a very quiet unit, as one would expect and hope; having a high impedance input the floating primary coil could perhaps be sensitive to unwelcome intrusion.

My first serious listening was from 192/24bit sources. The first movement of Sibelius

symphony Number One (Simon Rattle, Berliner Philharmoniker) after a quiet opening to get us ready for some lovely Nordic tunes has very busy lines of argument between strings and brass with percussion acting as referee. The preamp allows a good sense of what is going on without the busy lines getting confused. The initial transients from the brass instruments were quick and powerful. The strings were natural and warm with a solid and defined bass end. The space between instruments was just as I would expect, so I couldn't really fault the sound. No sudden bursts in transients from the instruments caused any concern. The detail is all there for the listening, but the music is allowed to breathe and relax during the very beautiful Sibelius melodic lines. I forgot I was listening to FLAC, and just took in the music. Of course it all should sound really good; there are no electronic gubbins getting in the way between the source and amplification, one reason why TVC/AVC passives are for many the obvious choice for high level sources. The soul of the device is that 'coil', and whilst it might not be as expensive as some out there, it is certainly well made. The reed relays undoubtedly enable adjustment of level to be quick, and whilst 1dB is a good modicum for steps on a volume control, because it is being operated by Hamlin relays which need time (albeit very short) to switch on and off, it still means you will hear slight glitches as you move the levels up and down at speed, sounding a bit like little scratches on records. I didn't feel it was an issue, and perhaps some clever software could minimise this, but whilst one expects it when physically moving notched volume controls, from a remote and sitting 6 feet away one doesn't really want to hear it. However, because changing level can be done at a greater speed than conventional heavy old school Yaxley rotary switches, I did not find it a problem.

Pal spoke to me about the 'ringing' effect that can be heard from TVC passives, one reason why he added the AVC mode, which reduces that top shine that some may not like in TVC preamplifiers. As he told me "In AVC mode the ringing is smaller with loading the primary with a 10k resistor." Having listened to TVC and AVC preamps in the past I have noticed the difference in sound, the former often being 'brighter'. By going into the mode setting I was able to select AVC and then use the tape monitor to A/B test between AVC and TVC. Indeed listening to my own album "Boxed In" and the track "Vertigo" that I know so well I was able to hear some of that top end disappear, and it also took away some of the stereo detail and excitement. The fact that I could now change the sound depending on how the

Triple M Icon Smart TVC Preamplifier



music was recorded was quite a good feature, though whether I would use it was debateable. Luckily it wasn't so radical as switching off and on the Dolby B on my cassette recorder I played at the start of the review, and Pal spoke to me about using it to tailor the sound of your hifi just as you might select different cables to get that perfect match. 'Blues on Bach' and the track "Regret" from the Modern Jazz Quartet released in 1973 with its harpsichord and vibraphone gave me a chance to test out the AVC mode as well as that ringing effect. Yes, the sound is brighter than my resident preamp, but I did not find any problem in the enjoyment of music. The piano in "Blues in B Flat" settled things down, but the brilliant vibraphone playing from Milt Jackson had much force and showed the slight imperfections from the microphones, which in AVC mode was more realistic, though the extreme stereo from the two microphones across the instrument was more noticeable in TVC mode.

Turning to London Grammar "Hey Now" that bass was more pronounced than I had heard before, showing that there wasn't any lack there and the AVC mode did settle some of the edginess down; especially the slight over-modulating in her voice when she got excited. Track three "Shyer" starts with a short 8 second rehearsal before they begin for real. I have spoken before about groups trying this "as live" technique at starts of tracks, but I don't think it actually ever adds to the music, just as some artists seem to like to add fake record scratches on tracks

created on computer audio mixing software.

Whilst mid frequencies were clean and well defined, only the lowest bass sounds weren't as solid as I have heard, though the slight reduction at top frequencies in AVC mode settled the performance down.

Dadawa 'Sister Drum' is one of my favourite albums with extreme dynamic range, excessive bass and extreme ambience; an album of Tibet influenced music sung by a Chinese lady called Dadawa with music by He Xuntian. This was the first Asian album to make 1 million sales. "Home without Shadow" starts very quietly and builds up to very loud finale if you start the track with your levels too high. This album is full of unusual instrumentation and backing vocals and highly enjoyable when neighbours allow you to raise the levels, especially the last final "The Turning Scripture". Bass was powerful and well controlled. The mids are detailed and human. Only the top slightly didn't hit the highs as musically as I have heard, though this was still an exceptionally good performance and more than met its price tag.

Conclusion

For £1499 for the unbalanced or £1999 for the balanced version, this is an exceptionally well thought out and clever unit for those wanting the clarity and purity of passive but with additional features turning the technology truly into the 21st century. This is an exceptional first product and only the extremes of bottom and top end were not quite as good as some passive preamplifiers

that cost significantly more, but being able to select AVC or TVC allows you to get the best sound for your system. In terms of features and originality it is in many ways an outstanding product and well worthy of your attention.

AT A GLANCE

Build Quality: Well put together with black aluminium frame. A basic design made more exciting by the TFT screen and socketry at the rear.

Sound Quality: Clean sound as one would expect from a transformer design. Provision for altering levels and balance, that doesn't interfere with sound, and the choice of AVC or TVC, which will do, just so you get it all right.

Value For Money: At £1499 for the unbalanced passive pre with this amount of facilities including TFT screen and remote, this is an exceptional product.

Pros: 1dB steps

TVC/AVC at excellent price point

TFT screen

Remote

Facilities to change levels

Cons: Not at this price

Price: £1499

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PS Audio Stellar Gain Cell DAC/Preamp & S300 Stereo Power Amplifier

By David Blumenstein

**Hailing from The USA
the PS Audio Stellar
Gain Cell DAC/Preamp
& S300 Stereo Power
Amplifier cost \$1699
and \$1499 respectively.
Here the all American
duo are reviewed by
David Blumenstein**

PS Audio Stellar Gain Cell DAC/Preamp & S300 Stereo Power Amplifier

You can produce relatively affordable HiFi products. You can do so and be true to your roots. This is what Paul McGowan and the team at PS Audio endeavor to achieve. PS Audio came to the public's attention with the introduction of its cigar box preamplifier for the princely sum of \$59.95 just over 40 years ago, and as it and the industry evolved, so did the company's product lines and prices in keeping with the growing market. The Stellar DAC/Preamp and S300 Stereo Power Amplifier present an opportunity for true value for money. The pair's straightforward unassuming external design hide a beastly duo under the bonnet. The duo go for the minimalist look, as apart from the two glow-in-the-dark PS Audio logo emblazoned power switches, it is the lone menu display of the Gain Cell DAC which sheds any light into the room.

Out of the box, and with the vast array of gear in my listening habitat, I dug into my hacker bag of tricks and fashioned a makeshift system rack out of the black styrofoam packing/stabilizing material. Fitting and then stacking each of the units on top of each other proved to be rather effective, and when sharing such with PS Audio, I managed to instigate equal parts: intrigue and laughter. It took less than 15 minutes to extricate the gear from their respective boxes and get them set up in my test environment. PS Audio's included documentation wastes neither precious time nor paper getting to the heart of the units, deftly explaining the components' respective features, settings and options.

As alluded to earlier, prices have steadily been on the rise and if there is any future for the HiFi industry its designer, manufacturers, vendors must come out with relatively affordable gear. PS Audio's Stellar Gain Cell DAC/Preamp retails for \$1699.00, and S300 Stereo Power Amplifier for \$1499.00, so let's call it an even \$3100.00 for the pair and for the purpose of this review I shall treat them as an intrinsic pair. You could shop for them separately, but I see their synergy making their whole definitely greater than the sum of its parts. My reference for this review is comprised of an exaSound e22 DAC, Parasound Halo 2.1 Stereo Integrated Amplifier, Bel Canto s300 i/u Integrated Amplifier, Audio Physic Tempo, Platinum Audio ST1 and Mission 727 speakers. Interconnects and speakers cables, a veritable hodgepodge of Audioquest, Cardas and Transparent Audio. Throughout my evaluation I was swapping out gear and cables regularly. My front end was/is a Mac Mini connected to 10TB of lossless music running Roon, VOX and Audirvana Plus.

Word to the wise. Over the years I have accumulated many, perhaps too many audio software applications and I should have learned from past experience, so here we go. If you are going to readily update and upgrade software, when whole new versions come out make it a point to to totally uninstall previous version, not just the application but all



ancillary files too as they can cause much headache. I was faced with the issue of not

PS Audio Stellar Gain Cell DAC/Preamp & S300 Stereo Power Amplifier



being able to play DSD, DSDIFF, and SACD ISO files as DSD, and forced to configure the software to playback files solely as PCM, and not make use of DOP. This was unacceptable and after contacting PS Audio about this, I went through the process outlined above and was able to rectify this troubling issue. I could now play the files natively as intended.

Stellar Gain Cell DAC/Preamp

The Stellar Gain Cell DAC, a combination DSD DAC and an analog preamplifier, is made in the United States, and in this day and age shockingly affordable. For the money it's a relative bargain, leveraging PS Audio's NuWave DSD and a 32-bit ESS Sabre Hyperstream DAC. The Gain Cell, with its passive analog filtering accept inputs, both I²S and USB and can handle up to 2x DSD (128) and 24-bit/192 kHz PCM. With the requisite server software it can act as a music server, as signals enter natively WITHOUT sample-rate conversion, the Complex Programmable Logic Device (CPLD) utilizes proprietary Digital Lens technology to re-clock, reduce jitter, and diminish propagation delay. A choice of three digital filters allow for both flexibility and customization for present and future components. These filters are only effective for PCM digital audio. They are ineffective with respect to analog sources and DSD sources and selectable via the onscreen menu. With such filters there shall be compromises: the sharper the filter the greater the amount of ringing.

Filter One: Slow Roll-off Linear Phase -> Least sharp, least ringing. Some loss of high

frequency detail. PS Audio has determined this to be the most musical sounding, thus it has been selected as the default filter.

Filter Two: Fast Roll-off Minimum Phase -> Better higher frequency response, more ringing without pre-ringing. Suggested filter for those preferring 44.1 kHz

Filter Three: Fast Roll-off Linear Phase -> Equally height frequency response. Less riding than #2, exhibits pre-ringing. According to PS Audio, in testing it was found to be the most analytical.

PS Audio's digital filters each have their own particular sound profile and as much as PS Audio attempted to describe them adequately in their documentation, I would advise listening to each of them carefully prior to settling on one over the other, and just because you choose one, does not mean that you cannot change your mind at later listening sessions. It is not like you are limited to a finite number of selections, much like DVD region codes.

The Gain Cell's analog preamplifier is where the DAC/Preamp combination shines, PS Audio has managed to streamline the design, by making use of its variable gain cell topology to have the pre-amp's amplifier take its cues directly from the front panel's volume control. Eliminating steps and noise in the process lets you hear more of the music, your music, and no extraneous sonic effects. I connected a number of external phono stages and my reference DAC and they all benefited from the above. Of particular note was the combination of the

Parasound Z-Phono USB phono stage, I was amazed by both the clarity and volume of sound. DACs have a come a long way in the four years I acquired my exaSound e22, at the price/performance point of the Stellar DAC/Preamp/Amplifier I could easily be satisfied.

PS Audio's proprietary secret sauce: Digital Lens

Input signals native into Gain Cell DAC, no Sample Rate conversion fed directly into PS Audio's CPLD (Complex Programmable Logic Device).

CPLD determines sample rate/format, rechecks data, reduces jitter, shapes data, reduces propagation delay achieving great throughput

I²S, a format specific to CD transports and several servers, is incorporated by PS Audio and sent via an HDMI cable. While this format separates the clock and data signal from the start which are multiplexed over S/PDIF and/or AES/EBU, the number of components taking advantage of I²S are limited, save for PS Audio's very own DirectStream transport.

Stellar S300 Stereo Power Amplifier

The Stellar S300 Stereo Power Amplifier is a sleek, unassuming dual-mono power amplifier which punches far above its weight. Full size it may be, but it is not physically overpowering. I found myself having to keep looking back at the unit to make sure it was there. Darren Myers should be congratulated for delivering 140 Wpc into 8 ohms and 300 Wpc into 4 ohms - not a misprint - making

PS Audio Stellar Gain Cell DAC/Preamp & S300 Stereo Power Amplifier

the most of ultra-linear, high current Class D for the output stage and discrete Class A MOSFET Analog Cell for the accompanying input stage. The sound is spacious, full and seemingly effortless, and what I would have expected from a more costly tube/valve amplifier. The richness of detail and fluidity made my entire listening/evaluation experience in a word: non-fatiguing.

Assigning separate power supplies to each of the two channels makes for a clean sound: low distortion, high efficiency, precise linearity and a whole lotta power for the money.

Living with the Stellar DAC/Pre-Amp/Power Amplifier

I've been writing, commenting and venting about the future of the HiFi industry to anyone who will listen. There exists this chasm which has now been 30+ years in the making. The ever increasing prices of gear and equipment has put HiFi out of reach of the mainstream. At some point something had to give, manufacturers had to wake up and do something hitherto unheard of, and that's build HiFi grade separate components, two of them, in the United States at a price which would normally be reserved for one component.

The Stellar DAC/Pre-Amp/Power Amplifier filled my listening room with 3D sound, and they matched well with each of my speakers; the floor standing Audio Physic Tempos, the stand mounted Platinum Audio ST 1's and the low-to-the ground Mission 727s. I was surprised how different they made each

sound and I spent a great deal of time swapping out my Parasound Halo 2.1 integrated amplifier, Bel Canto s300 integrated amplifier to make sure I wasn't fooling myself. And, yes, I was hearing something new and more evocative from my usual suspects.

I am quite familiar with my California Audio Labs Icon MkII CD/Audio Note DAC 1.0 front end combo, so I was eager to see just how it would sound with the Stellar DAC/Pre-Amp stepping in. I should not have been concerned, and that pains because there's a lot of positive memories stored up in that Audio Note, but it's high time I become both realistic and pragmatic about the amount of gear I own and the space it takes up. This PS Audio combination, if it were indeed to stay, could free up so much room without sacrificing sonic quality and that's what a good deal of this all about. I remain amazed by what has been made possible, and just how any piece of music I threw at the gear was made all the more musical.

An interesting feature of the amplifier is its Output Disable Mode, in which it is advised to keep the rear panel power switch on at all time, and to activate it by pressing the PS Audio logo button on its front panel so it is lit. Conversely when it is not lit the amplifier is in Output Disable Mode, somewhat like the familiar hibernation mode. For those prone to not hovering over their systems, being able to activate the system remotely is a most welcome added functionality.

In answer to the question, could I have my cake and eat it too? Yes, I could see the PS

Audio Stellar Gain Cell DAC/Pre-Amp, S300 Stereo Power Amplifier make more than an appearance in my home. They would be warmly invited to stay, allowing me to make my apartment more about me and less about the gear, hence more room for friends, guests and neighbors who like the sounds coming from down the hall. I was seriously considering upgrading my Audio Physic speakers until the PS Audio gear arrived, grew on me and really opened up after the recommended burn-in period and now I'm not so sure. It may eventually happen, but not at the pace once contemplated.

As a reviewer I get to live with gear for a prolonged period of time and really get to know the gear and not only assess its benefits and conversely its shortcomings, but also make legitimate comparisons between what was, what is and what could be from and in the comfort of my very own listening environment.

Conclusion

PS AUDIO may have indeed cracked a new genre in HiFi quality relatively affordable separates which do not skimp on quality and maintain a high level and degree of musicality. The components live up to their Stellar name and do so without being flashy... appropriate restraint. Once powered on, they all but physically disappear allowing the music to take center stage.

Recordings upon which this review and conclusions based:

Pure Michael: Motown A Cappella



PS Audio Stellar Gain Cell DAC/Preamp & S300 Stereo Power Amplifier



Smoke & Mirrors: Percussion Ensemble

Talk Talk: The Colour of Spring

Elgar Cello Concerto Op. 85: Jacqueline DuPre (JVC xrcd24)

Sheffield Lab Drum & Track Disc: Jim Keltner & Ron Tutt (JVC xrcd24)

Charlie Watts Jim Keltner Project

Corduroy: London, England

Midori Takada: Through The Looking Glass

Morton Subotnick: The Wild Bull

The Brand New Heavies: Trunk Funk

Daniil Trifonov: The Carnegie Recital

Sigiswald Kujiken: J.S Bach Cello Suites (shoulder cello)

Andris Nelson - BSO: Under Stalin's Shadow, Shostakovich Symphony #10

AT A GLANCE

Build Quality: Much in keeping in with PS Audio's tradition of making hard wearing gear both the Amplifier and DAC are built like the proverbial "brickhouse" made to last. This pair at not going to win any beauty contests, yet they maintain a rather understated elegance.

Sound Quality: PS Audio has managed to breathe new life into time worn songs. The amplifier, with more than ample horsepower, can be reigned in when necessary as so to not overpower the music or one's speakers.

Value for Money: It has been time that a company has come out with relatively affordable separates. At their price point the

combo is quite attractive and should challenge other HiFi manufacturers to do likewise.

Pros: The musicality, the price, the value for money unheard of today and hopefully a sign of more to come. Punches way above its weight and can hold its head high. No shame there.

Cons: Hard to fault this combination as it does as advertised and surpasses expectations. From a pricing perspective, I could see selling the pair as matched set for \$2999 and really blow the roof off the category: Affordable Separates. Quibble: the DAC support 128 and not 256.

Price*: DAC/PRE \$1699; S300 Amplifier \$1499

*As at 31/10/2017 PS AUDIO has announced a bundle price drop in the Stellar AMP/DAC combo. The pair can now be purchased for \$2799.



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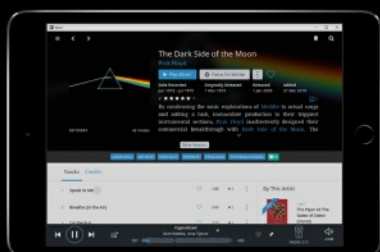
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MUTECH MC-3+ Smart Clock USB (Master Clock/Reclocker/SPDIF Converter)

By Dan Worth

Dan Worth plugs the £900 MUTECH MC-3+ Smart Clock USB into a couple of his systems with some interesting results.

The first product was handcrafted by Christian Peters in his dad's workshop around the end of 1989



MUTEC products are installed in cutting edge broadcast and television stations, well-respected recording and mastering studios as well as renowned musical theatres, opera houses and universities all over the world. The new line of audiophile consumer products takes their experience from the broadcast and pro audio world into the listening room at home to provide a level of audio performance generally only found in the professional world where the bang for buck is far greater.

Company Background

It was the year 1989 – the first Love Parade draws a crowd of about 150 ravers to Berlin's Kurfürstendamm laying the foundation for years of techno revolution to follow. The very same year Christian Peters, CEO of MUTEC GmbH, registered his business for the first time with the city of Berlin. Together with a classmate of the time, an audio engineer at the former Teldec studios in Berlin, he was musing about an appropriate name for the newly conceived company in his home's party room. From the start it was clear to them both that the brand name should symbolise the liaison between music and technology. So the name and its maiden spelling came to be: Mu-Tech.

In the 90s, as part of a re-design of the brand logo, the company name MUTEC was established to be more appealing to a global audience.

The first product was handcrafted by Christian Peters in his dad's workshop around the end of 1989. It was a 2 MB flash memory expansion card for the venerable AKAI S1000 sampler, a product Mr. Peters had just been able to afford thanks to several summer jobs. Since the sampler had four slots for memory expansions Mr. Peters and his father built more cards for himself and also started to offer them to DJ and musician friends for purchase.

This sparked the idea of selling these expansion cards to studios in Berlin and the surrounding area. As the young business made a name for itself the first distribution contacts and an expansion of the product portfolio were soon to follow. The success of the memory cards led to a bigger scale, automated production by a Siemens owned contract manufacturer. Later in the 1990s MUTEC became an exclusive supplier of memory expansions for all European AKAI distributors.

When the company registered as a limited liability company in 2001, Mr. Peters began designing the first audio and video clock generators, format converters and sample rate converters with the help of an extended team of skilled developers. It's these products that MUTEC are still widely known for around the world.

Currently MUTEC is focusing on the HiFi market where the MC-3+USB Smart Clock USB with its unique audio re-clocking and USB isolator capabilities has gained an excellent reputation and is a product which is right up my street due to the nature of the systems I run.. MUTEC is furthermore about to release a range of products specifically designed to meet the demands of audiophile customers. Even so, MUTEC continues to provide support and develop new products for professional audio applications and mastering studios.

MUTEC MC-3+ Smart Clock USB (Master Clock/Reclocker/SPDIF Converter)

Company Philosophy

"The symbiosis of music and technology is the foundation for the beginning of the company and still today this concept is at the core of every product made by MUTEC. Technical know-how, transparency, and exceptional audio quality are our highest priorities. Instead of overpriced, esoteric mumbo-jumbo with questionable results we focus on real, reproducible, and measurable solutions to achieve the utmost sound quality."

Hands down one of the most encourageable comments I've heard from a company in years. MUTEC are definitely a company after my own heart, combining technology and music with a realistic price tag that the world of HiFi should take strong heed of!

It's Mr. Peter's personal mission to source the highest quality components within a given product budget, since those components directly affect audio performance. He continues to push the boundaries up to the limits of financial viability to get the best sound quality possible for the money.

Signal Processing and Jitter Control

In A to D and D to A conversion, the digital signal needs to be clocked accurately to prevent distortion. Digital audio is made up of amplitude values of a signal at different points in time (known as samples). Samples are taken many times a second, and need to occur at regular intervals (44.1 kHz is the sample rate used in commercial CD audio). If this does not happen, the amplitude of the signal will not be recorded or played back at the correct time and so distortion will be introduced into the signal. When the clock is not consistent in its timing, the resulting distortion is known as 'Jitter'. If the clock frequency changes, it is known as 'Drift'.

Firstly, without getting too technical I'll explain why we need a word clock. Digital audio, as we know, is made up of 1s and 0s, or 'bits'. These bits are grouped into sample

words. The word size for common digital audio is 16bits, 24bits and 32bits and even 64bits. When talking about 24bit audio, we mean data with sample words of 24 registers for bits. When these sample words start and end at the same exact time on several devices, we have 'word sync'. Which is what we want, synchronising all clocks in the digital chain.

When using multiple digital audio devices they must use the same size word and travel at the same speed (sample rate). So what would happen if you send a signal at a clock of 48kHz into a device working at 44.1? The receiving digital device may well just not lock or you might find one of the devices explode into an intensely loud cascade of white noise, which I'm sure people have encountered via computer audio, I know I have on many occasions using my Mac, which requires accessing of the 'Audio Midi Setup' to choose the correct clock rate for the material and accompanying DAC/clock.

If the clocks are very close, but not perfectly, synchronised then this is when we get "jitter".

Jitter may be subtle or extreme. At it's extreme, there will be distortion that almost sounds like ring modulation or an intense tapping/popping sound. Sometimes you will hear the rhythmic pulsing of soft white noise bursts happening about a second apart. As the rates get closer this is more like loud popping and crackling noises in the audio which still makes the sound unlistenable. As the rates get even closer, you might hear only a few microscopic barely audible ticks now and again. Many of us may actually have systems plagued with Jitter but because the artefacts are so far apart we tend to ignore them like one would ignore the occasional vanilla record pop and click. Actually, you can have a perfect lock without clicks and pops, but still have quite a lot of Jitter. These subtle timing errors usually affect spatial resolution and staging, as well as the depth of the sound field.

Adding a Word Clock

Clocking between devices can be carried out in a few different ways. Devices can be connected using a BNC cable connected to the "Word Clock In/Out" of the device. Other connector types can be used such as RCA in this way as well. Devices can be connected in daisy chain configuration where a BNC T piece is used to split the clock signal but this is more so for professional studio use.

When using AES, S/PDIF or ADAT, the clock signal is encoded into the data stream so there is not necessarily a need for a BNC cable to provide a clock signal. The type of connectors used to clock depends on the equipment being used in the setup. This is the most common way for the HiFi enthusiast to integrate a clock into their system.

For the purposes of this review the MUTEC MC-3+USB will be used as a reclocker or SPDIF converter and again the most common way of implementing the clock is via the USB input from a computer or streaming device. The idea is that the dirtiest power from the computer fed across the USB +v/-v rails is isolated from the DAC, the MUTEC will re-clock and reduce the amount of jitter associated with the computers noisy clocks and reprocess the signal into either RCA, XLR or Optical outputs which as mentioned before carry the clock word length and sample rate in order to lock the DAC to a precise size, ensuring a stable signal.

So now you have a stable lock and music is without pops and clicks the only other option is to determine which cable sounds the best for your tastes and DAC implementation, I suggest AES/EBU, then RCA coaxial, then optical as a last resort, the reason being is simply down to the favoured sound quality over many years of testing the cable and connection types.

The Physical Unit

The MUTEC MC-3+ Smart Clock USB has a solid steel case with a 4 mm aluminium front panel which is available in black or silver. The fitted feet have recesses for included rubber rings which adjust the sound subtly. If



you a fan of Xmas then the front fascia of the MUTEC will please you. There are led status lights for each and every bit depth and sample rate, along with PCM and DSD designations, the lights are bright and after a while of me using the unit, becoming familiar with its settings and syncing it with my DAC I soon found a spot where it could live in behind other equipment to hide the front panel lighting. Note: Optionally, you can also turn off a LEDs except for Power and Lock with a key command. The MC-3+USB has a single USB input for computer or streamer connectivity, along with optical, BNC and AES/EBU inputs. Outputs to AES/EBU, RCA coaxial and optical SPDIF variants are available. There are also 4 BNC Word Clock outputs. I would have liked to have a HDMI output for direct I2s coupling to my DAC but I'm sure that the innovative MUTEC will look into this in future products, other than that the MUTEC is as feature rich and informative as I and other consumers will require.

The Sound

My main passive system has two digital sources, a Melco N1/a and a Modified Mac Mini. I already use a clock from digital whizz kids Rockna - the Audiobyte Hydra Z and accompanied ZPM power supply, which I enjoy very much, having concluded very early in its demonstration period to be a crucial part of my setup and replacing a former model from the company. Unlike the Hydra the MUTEC doesn't have the ability to use an external linear based power supply to clean things up even further. The Hydra doesn't have a front panel dressed in a techni-coloured dream coat, you could argue that the front panel is extremely informative where the Hydra has absolutely no indication to what's going on and it costs £300 more.

The MUTEC doesn't have I2s over HDMI. What it does have though is a host of digital inputs all selectable via the front panel, rather than the Hydra's single USB input and a preferred by many no doubt simple one box solution. Both have multiple clock outputs to sync multiple devices or multi room systems, the MUTEC however is the only one of the two that has the standard 5v Word Clock output, the Hydra uses the older 3.3v which I've found isn't compatible with much I've tried it with unfortunately.

In short the MC-3+USB sounds cleaner and more transparent than the Hydra Z, the Hydra Z is a little softer sounding, not having the level of absolute precision of the MUTEC. I preferred the Hydra with the Mytek Brooklyn DAC due to its own clean nature and the MUTEC is the perfect companion to my main systems DiDiT 212SE DAC,

bringing welcomed sonic benefits to either DAC.

The best way to describe the sound of the MC-3+USB in the system is stable. The soundstage goes from a slight ghostly blur to a solid, accurate and clear image. Leading edges of symbols, plucked strings and drum strikes are much more accurate and realistic in tone and timbre. The outer boundaries of the soundstage too have more prominence in their appreciation. Notes are more easily discernible and micro details become clearly defined rather than a lesser defined smear in the darkness, overall giving better structure, three dimensional and presence to a performance. This, all truly audible even with my already very clean and well worked out system.

When listening to vocals, the differences come with more natural and effortless power, better expression of the upper mids allowing for clearer toning of extreme highs from females and the same dignified approach to the lower end of a males voice. Overall positioning in general of the vocal is more focused, stable and organic.

Extra transparency and background darkness throughout the frequency range achieved by the MC-3+ produces increased separation especially noticeable in the high regions gives a larger performance and allows for more inner detail to come through without swamping the soundstage or becoming confusing or exhausting, even with it's cleaner presentation. The MUTEC really allows the listener to explore recordings in more depth, digging really deep into the mix and extracting the finer rifts and tempos to make for a more complex performance, sometimes finding flaws in the music which are masked prior, but in most circumstances proves to be very interesting and adds a new dimension during listening sessions from time to time.

If you're the kind of person who likes tweaking your system, with different cabling, supports, positioning and other magic trinkets you will undoubtedly love the MC-3+USB. Adding one to any system - as well as giving large improvements in detail and timing, also allows for other smaller tweaks elsewhere in the system to become more prevalent due to a greater level of transparency in the source signal. Similar to having great tyres and suspension on a car, allowing the driver to communicate with the road and other performance tweaks more intelligently.

Listening to the music and not just the equipment is a phrase used by many these days as high-end Hifi does have a tendency

The MUTEC
really allows
the listener
to explore
recordings
in more
depth,
digging
really deep
into the mix

MUTEC MC-3+ Smart Clock USB (Master Clock/Reclocker/SPDIF Converter)



to lean further towards the exploitation of detail and dynamics, which can often lead to a starker and less involving rendition of the recording. The MC-3+ Smart Clock USB from MUTEC has the ability to extract information on a nano level and does an incredible job of maintaining musical flow and natural dynamics. The passion in the music is reflected by MUTEC's passion for building equipment that can steadily walk the tight rope between accuracy and emotion and listening to live performances from the likes of Sting, Candy Dulfer and Fink reflect this statement.

Every live performance I listened to really opened up a window into a deep soundstage that clearly defined spacial awareness of each band member along with clear placement of the crowd. Each applause was separate to the stage and even stage height was more defined than without a master clock in play. Acoustics and reverbs dependant on venue were so well perceived that late night intimate listening gave that 'transported to the concert' feeling, which again adds to the enthusiasm for the music and our own emotional connection with it and our systems.

In theory, good digital should always be better than by nil but in practice it's really not true, however as technology develops and companies such as MUTEC keep pushing the boundaries producing equipment with love and honesty at their core maybe digital will find its way into the hearts of more enthusiasts.

My Active Systems

I have two active systems also at home, one is a pair of Focal CMS50 which sit on the desk and are ran via a Mac Mini connected to a Mytek Brooklyn DAC as the only source and the other comprises of Focal CMS40's with the CMS Sub, this system also has a Samsung 55" curved screen, a Virgin Media

TiVo Box, an Innuos Zenith MK2 streamer and an Amazon Fire TV, all into an Audiolab M-DAC.

Adding the clock to the first of these systems (desk) allowed me to use a BNC cable to lock the Word Clock direct to the Mytek Brooklyn DAC, produces results that were quite honestly as respectful, transforming and as enjoyable as the passive system. The lock was initiated instantaneously after cable connection was made. This system is reflective of a small home studio system and with modifications to the Mac and running AmarraRemote Symphony it is more so a playback system really, although can easily be changed with software to a mixing system, none the less even with upgraded linear supplies and exp naive cabling and unlit mains setup this system was taken to a new level of detail retrieval and overall performance with the MC-3+USB in the chain.

The second system warranted a clock ideally which could decode and re-clock a range of inputs to cover all the sources used in this setup and fortunately the MUTEC can. Now I couldn't connect all devices directly at first until I borrowed a non-expensive D to D converter as there are just way too many opticals involved in this setup. Although this setup allowed for access to the high-precision clock employed by MUTEC in the MC-3+USB my direct connections to USB and optical were producing a superior sonic performance than using the digital to digital converter. I was pleasantly surprised to find that the clock was able to produce an unsuspected rich and well balanced sound across a real glass optical and into the M-DAC, although USB and the AES and electrical SPDIF inputs along with USB still attained a sound which is superior.

There's absolutely no doubt in my mind that MUTEC's MC-3+USB is and was an

instrumental part of the audio chain in all the systems I implemented it. Although each system is of good pedigree the extra abilities of the precision clock added a new level of detail and timing that simply cannot be overlooked when building any quality digital system.

Conclusion

Adding a MUTEC MC-3+ Smart Clock USB to your music source will improve a system substantially, in fact it will enhance the sonic performance of the majority of systems and sources to a quite substantial degree.

The stability of the system pertaining to phase control and timing will allow a system to sound more effortless and controlled, with a greater sense of realism and believability within the newly structured soundstage.

An MC-3+USB will extract a whole heap more detail from the recorded material and present it in a manner which retains musicality. It's compatible with a whole range of streamers and works without issue on Windows or Mac and will support any source with any variant of SPDIF output.

Take your standard source to new heights or your high-end source to the next level.

AT A GLANCE

Build Quality : Solid, strong and sturdy

Sound Quality : Detailed with fantastic timing/imaging and strong musicality

Value For Money : Very strong performance and features with a fair price tag

Pros:

Loads of inputs and outputs

Incredibly low jitter

Excellent imaging and timing

Clean, grainless sound

Black background

Large increase in detail

Musical

Cons:

Front panel lights will offend some

No I2s over HDMI

Price: £900 give or take dependant on retailer



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Kralk Audio Elite Mk 2. Loudspeakers

By Ian Ringstead & Stuart Smith

Kralk Audio are a small company headed up by Alan Clark and based in the North of England. The Elite 2s are a standmount speaker with an off board crossover and cost £2500. Ian Ringstead fires them up

Kralk Audio Elite Mk 2. Loudspeakers



About 2 years ago I reviewed the original Elite which I had seen at the Whittlebury National Audio Show. I'd seen them in Alan's, the owner of Kralk, room along with the BC30 and I was fascinated by their design and external crossovers. When I reviewed them, I loved their sound and it has been a successful model in Alan's repertoire of products. Alan is not a man to rest on his laurels though and he soon decided to embark on an upgrade for the Elite. This entailed improved drive units and superb quality components for the crossovers.

It's a brave move when your current model is so good, but innovation and the desire for perfection is what drives Alan and motivates him to get up in the mornings. I applaud enthusiasm and many manufacturers have done the same. Marantz is one example where Ken Ishiwata produced Special Edition and KI Signature amps and cd players to huge accolades by the public. I have owned several of his models and currently use the SA11 mk 2 CD player, a fantastic machine which I see no reason to change now.

The new Elites look identical to the older version but Alan has worked hard to better them considerably with the drive unit, internal wiring and crossover upgrades. The DTPLS system used in the Elites stands for Dual Transmission Line Port System. It sends the rear output from the bass driver through a folded internal cabinet and then into a rear pressure chamber where it then exits the cabinet through twin ports at low velocity. This gives the scale of a transmission line with the flexibility of a sealed box design (infinite baffle) without the disadvantages of a ported enclosure. The crossover unit has also been further upgraded by the use of new stainless steel terminal panels and silver plated copper terminals, the whole unit is hard wired internally with The Missing Links Slingshot Evolution cable taking the performance to a whole new level of sound accuracy. The speaker has a brand new tweeter with a smoother flatter response both on and off axis and an extended range right up to 40khz, and the bass driver has also been upgraded to a new polypropylene cone which gives less distortion and cone breakup than the old paper cone unit and offers greater power handling. The cabinet is slightly bigger to take account of the changes in drive unit specification the cabinet is now 15mm deeper than the original Elite.

That's the design and theory, now what about the sound. In a nutshell sublime. I loved the old Elites, but the mk 2 has really upped the ante. I'd heard them at the Cranage show and at Mark Sears home of Missing Link fame so I knew what to expect. There's nothing like hearing them though in your own system. I hooked them up to my Jeff Rowland 112 power amp and used both cd and records as my source. Having been used to my Audio Physic Avanti's for a while now, moving to another speaker was going to be somewhat different. I

These speakers offer you an insight into recordings and recording space, or stereo mix, that really does belie their relatively modest asking price

Kralk Audio Elite Mk 2. Loudspeakers

must say that the only real major difference was in the bass output. My Avanti's are superb here and with four bass units per speaker excel in low end reproduction. The Elites are probably an octave less, but if you hadn't heard the Avanti's you would be none the wiser.

Dynamically the Elites are spot on and very fast and tight. I purposely pushed them hard to see what they were capable of and they loved it. The originals had great bass for their size and that port system really works well, but the mk 2 improves here with even better and tighter bass. I tried David Gilmour's new album "Live in Pompeii" which is a fabulous recording and I was suitably impressed by the sound stage and clarity of the recording. Detailing was superb and I reckon you would struggle to better the Elites here. The combination of the new drive units and cross over certainly win through here with exquisite inner detailing and I'd liken it to a macro lens on a camera where you suddenly see a

whole new world of magnified detail or in this case hear things you didn't know were there before. It's the startling reality and rightness of the sound that so impressed me. Good products tend to just get on with it and don't need to shout here I am at you to get your attention. In fact, it's better that they don't. If you are impressed by a sound initially, but then tire of it, then it isn't natural. I liken Class A amps and valve amps in this category which have a certain "Je ne sais quois" "which is hard to put in words always, but when you hear them they just sound nice.

I tried Steven Wilson's album "The raven that refused to sing" which is conceptual rock music and challenging for any system with its dynamics and detail. His music reminds me of King Crimson with its frantic chords and rapid changes in pace, but interspersed with melodic melodies. It is infectious and on a good system is spectacular. The Elites loved it and the rhythms came through superbly

with Wilsons guitar and keyboard playing a key role in the music. I marvel at talented musicians and their abilities not only to play, but also write the music in the first place. Progressive rock is one of my favourite types of music to listen to as it doesn't conform to the three minute pop concept and demands your attention when listening to it. I also like to listen to whole albums rather than skip from track to track on different albums. Other rock included Yes with "Close to the Edge" and "Drama".

The Elites aren't too fussy where you place them, although near to a back wall will re enforce the bass output. I used them on the PAW stands Alan supplied and they worked well. There isn't much more I can add other than if you are interested in upgrading to a pair of stand mount speakers then I seriously recommend trying the Elites out. Alan will happily let you audition them at his home or Missing Link have them on permanent demonstration. Alan will gladly make specials



Kralk Audio Elite Mk 2. Loudspeakers

with specific veneer preferences or change the internal wiring and terminals to any the customer so wishes. In conclusion, all I can say is that although the Elites don't have the weight and gravitas of my big floor standers they certainly fight well above their weight for a £2500 speaker.

AT A GLANCE

Build Quality: Excellent for the price.

Sound Quality: Excellent, natural, open and detailed with superb dynamics and bass for the size.

Value for Money: Excellent compared to the competition.

Pros: If you have a good system then the Elites will shine brightly and you will certainly be in elite company.

Cons: Not cheap, but the quality of sound and finish is superb.

Price: £2500 a pair.

Having been nominated for an Outstanding Product the KRALK Audio Elite 2s were packed up and shipped over to France for Stuart to have a play...he was always having these speakers anyway as you will read...

There is, like many things, a bit of a story about how this review came about. Back in the cold and dark of January earlier this year

we returned to the UK to pick up a new car to import back here to France. Whilst in Yorkshire we thought it a good opportunity to pay a visit to Alan at Kralk, say hello and have a look at his then recently finished demonstration room. Whilst in their he popped on some tunes through his Elite Mk 2s and then disappeared to make a cuppa. The long and short of it is that when he got back with said cup of tea I ordered a pair there and then I was so smitten with them.

However, I didn't want to be the first of the Hifi Pig team to review the speakers having bought them and what with Ian having reviewed the original Elites it seemed sensible for him to do the MK 2s. So off they went to Ian with me knowing whatever the outcome they'd be winging their way to me. Now the process of reviewing here at Hifi Pig is I think unique. If a product comes in and a reviewer thinks it is worthy of an Outstanding Product award then said product must go to a second reviewer and they must also deem it worthy...no outstanding second review, no gong.

So the speakers arrived with their matching stands a couple of weeks ago and since then I've had them hooked up to various amps including the Merrill Audio Thors and the Graham Slee Proprius' (also an outstanding Product winner) and without fail they have shone out as a really super loudspeaker. Yes they have their limitations in that they are a relatively small loudspeaker and won't fill a concert hall, but in our pretty large listening

room there were no issues at filling the room and energising it to pretty loud listening levels; folk living in the typically sized home in the UK will have absolutely no problems. At 89dB the Elite 2s aren't the most sensitive of speaker but the little Proprius amps (26 Watts into 8 Ohms) didn't encounter any problems what so ever.

So what do they sound like? Well Ian has pretty much summed them up and I echo what he has said in his analysis; the Elite2s are fast, agile and incredibly dynamic with oodles of detail in the mid and top. Daft Punk's Contact (if a speaker can't play this well they get short shrift here at Hifi Pig Towers) was handled with aplomb; plenty of low end grunt to the sound effects that build through the song with crispy shimmery highs. Deep Purple's Smoke On The Water's, from Live in Japan, bass line was growly and as it should be. The truth is these speakers aren't going to plumb the absolute depths, their quoted lowest frequency is 35 Hz, but unless you are one of these folk that insists on subs that go down to the very lowest frequencies you will be well happy. Tight is a word I often use and these were tight as the proverbial, with no bloat in the bass at all. Mid frequencies are fluid and very detailed, in fact detail is a word I'd sling at the Elites throughout.

These speakers offer you an insight into recordings and recording space, or stereo mix, that really does belie their relatively modest asking price. Being a relatively small standmount they manage to create a very believable and not over exaggerated soundstage and in a lot of ways they do what a really good studio monitor should do.

I'd already bought these speakers months ago, after a very brief listen, with a view to them going in a second system in the dining room once it's done, and this they will, but they will also be getting dragged out into the main system when relevantly priced components come in for review as our mid-priced reference...yes, they are that good.

So, do I second Ian's nomination for Outstanding Product? Damned right I do, with sprinkles on top. Alan Clark has created a product that performs well in excess of its asking price, with much of this being down to the fact he is selling direct and I wholeheartedly recommend that if you are looking for a relatively compact standmount in the sub £4K region then you owe it to yourself to audition these at your earliest convenience. Even better is that Alan has reduced the price of the Elite 2s from £2500 to £1850 until February 2018, making them even more of a true audiophile bargain.



Paint It Black

"I felt I was listening to a more lifelike rendition of the music...good vocal projection combined with tight timing and a natural tonality make this cable extra special"

Tony Bolton

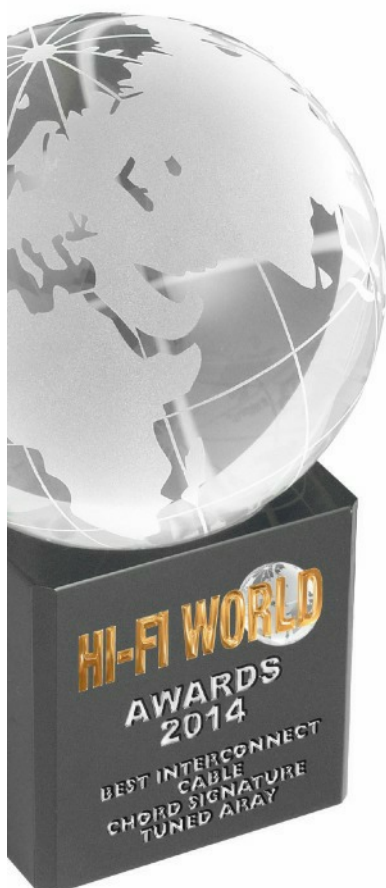


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Arcaydis EB1S Standmount Loudspeakers

By Ian Ringstead

Ian Ringstead recently reviewed the EB 2 from Arcaydis and now focuses on the smaller EB1S. Like the EB2 it is made in Sheffield in the UK.

Arcaydis EB1S Standmount Loudspeakers

So, in either the context of a bigger system or a budget bedroom situation the EB1S performed well



The review pair of these small speakers arrived in black and were well made, just as the EB2s were. White or oak are also available as standard.

I placed them on my 28" stands and hooked them up to the Temple Audio mono blocks, ATC pre amp, Marantz SA11 S2 cd player and various turntables. Speaker cable was courtesy of Tellurium Q Black11. Immediately they began to sing in my set up and although shy in the bass department produced decent bass for their size. This price area for bookshelf speakers is fiercely competitive and there are many well established brands out there that can produce fantastic value for money models. Kef and Dynaudio are two examples that spring to mind so Arcaydis need to really stand out.

I started with a diet of vocals and acoustic music to break them in gently and get a feel for their characteristics. Compared to the many small speakers I have owned or

reviewed over the years the EB1S stood up well. They were clear and relatively uncoloured which is a good sign, so I was able to audition them for some hours without any fatigue. As mentioned earlier, all small speakers struggle with bass output and handling of the lower octaves, but if well designed designers can cheat and fool the listeners ear. In any case when you listen to any component for long enough their shortcomings become less obvious. The human ear and brain are great accommodators of weaknesses and thank goodness, they are. I remember going to a Peter Gabriel concert years ago and the sound where I was sat was dreadful. This peeved me somewhat, but after 30 minutes or so I became accustomed to the venue and ended up still enjoying the concert. It's the same with hifi.

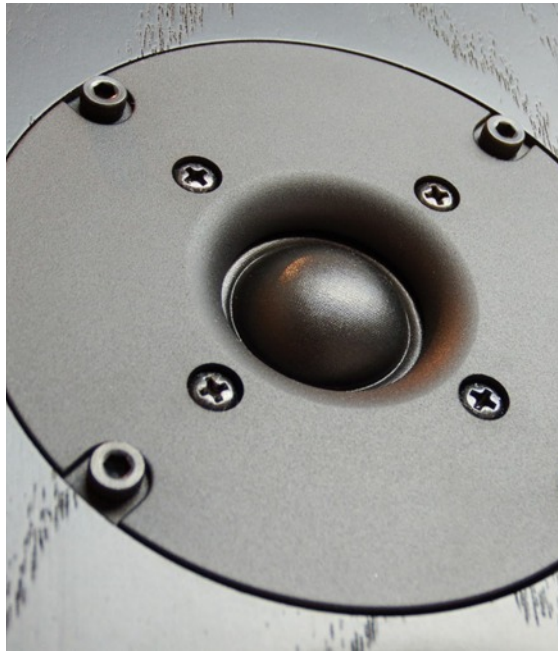
The EB1S produced a believable sound stage and was fine in my average sized listening room. On bookshelves or in a small room they would be no problem and

Arcaydis EB1S Standmount Loudspeakers

fit in well. Top end also was clear and not too harsh meaning a decent tweeter and crossover has been employed. Give them a good signal and they will rise to the occasion. Like the EB2's they are bi-wireable and have decent gold-plated terminals with metal links. I tried wired jumpers which did improve the overall balance and is something I would recommend anyone to do with most speakers that have the facility. The metal plates supplied are usually cheap base metal with a very thin layer of gold on top. Give me decent copper anytime.

Rock music is at times challenging for smaller speakers, but if you are sensible with the volume control a reasonable result is achievable.

The EB1S's managed well and I could tap my feet along and get lost in the music. In my work room, upstairs where I do my soldering and mods along with model making I have a second system to keep me happy. I tried the EB1S's in this room as it is typical of what they may be used for. On a shelf, the bass was more than adequate in the small room and I enjoyed several hours of my music without annoying my wife too much. The system was far more modest being a Sony cd player and an Amptastic amp, but it worked well. One particular Album I use a lot for reviewing is Michael McDonald's "Blink of an eye". This is a superb recording and fabulous music. A dynamic album it really tests a system with the complex mixing and multi tracking techniques by Ted Jensen at Sterling Sound. The rhythm section is so tight and has an infectious beat I can't help



but be moved by and never tire of listening to this album even though it is 37 years old. The EB1 worked well, but compared to my reference floor standers you realise where the extra money goes to produce a far more believable sound. The bass on my Audio Physic speakers just oozes out across the floor and is like a tidal wave of pleasure hitting you with its taught accurate and deep nature. The EB1 can't compete but then I don't expect it to...we're naturally comparing apples to oranges. You still get the idea though and if you hadn't heard this album on a good floor stander then you wouldn't know what you had been missing.

So, in either context of a bigger system or a budget bedroom situation the EB1S performed well. This price sector is fierce and the well-established brands have a

stronghold and advantage here. If you fancy something a little different from the usual brands then the EB1S is one to try out. It's well finished and won't offend. The original price on launch was £600 but Arcaydis decided to drop the price to £499 from £599 as they have upped production numbers and reduced overall costs which opens the market a little for these speakers and obviously makes them a more attractive proposition.

AT A GLANCE

Build Quality: Good on a par with the competition

Sound Quality: Good with a nice openness and clarity. Bass limited by physical size but still decent.

Value for money: Compared to the tough competition in this price range good as it must be. Neat and compact.

Pros:

Well made, solid design

Easy on the ear

Versatile in positioning

Cons:

Bass is obviously limited

Very stiff competition in this price bracket

Price: £499

Arcaydis EB2S Review

Specifications

Dimensions: 310mm tall, 170mm wide, 250mm deep. (264mm with grille).

Sensitivity: 86dB @ 2.8 volts @ 1 metre measured with pink noise.

Impedance: 8 ohms nominal. 5.9 ohms minimum.

Drive Units: 130mm paper cone bass/mid. 28mm silk dome tweeter.

Frequency range: Useable from 45Hz to 20000Hz.

Connections: Gold plated Bi-wire terminals.

Colours: Natural, Black Oak Veneers and White



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Tannoy Revolution XT8F Loudspeaker

By Dominic Marsh

Dominic Marsh takes a listen to the Tannoy Revolution XT8F floorstanding loudspeakers costing £1499.

Tannoy Revolution XT8F Loudspeaker



No fizz or tizz,
just good
clean
rendition of
wood striking
metal with
associated
harmonics
and ringing
decay

TANNOY. Now there is a name many people will recognise and it's one of the few names that are deeply embedded into the way people around the world would describe a loudspeaker system. The name actually occupies the same lofty and unique territory in our everyday language as the name "Hoover" is used to describe vacuuming your home, as in "I'm going to Hoover the carpets". How many times have you read in a newspaper, book or magazine, or perhaps watched a TV program or film containing these words: "An announcement was/will be made over the TANNOY system for all passengers to" and is still in regular use even today? No surprise either that Tannoy are still manufacturing Public Address systems as well as a huge range of professional studio equipment.

I was curious about where the name was derived from and I found the answer on the Tannoy website under the history heading. The name was formed from the metals they were using in the production of their rectifiers as in Tantalum / Lead Alloy and adopted as the formal company name in 1928.

It is truly refreshing to see that the name Tannoy is still 90 years later still at the forefront of loudspeaker design and that I have the honoured task of reviewing the Revolution XT8F loudspeaker.

Construction

The first thing that strikes you is the trapezoidal shape of the cabinet which you either warm to or you don't. Looking at them squarely face on means you don't see the side walls at all anyway. Unusually too, there is a factory fitted plinth that the speaker sits on

Tannoy Revolution XT8F Loudspeaker

which does two jobs no less. Through the aperture between cabinet and plinth is the bass reflex port firing downwards and the plinth having a larger footprint than the cabinet, means it adds additional stability to the speaker as well as some additional mass. Three jobs then, for the keener eyed readers amongst you. Nice to see real veneer on the cabinets, in this instance a pale honey Oak colour, with a choice of Dark Walnut as an alternate option.

The speakers are supplied with a dark colour fabric covered grille, attached to the cabinets by secreted magnets within the cabinet.

Driver complement consists of Tannoy's "Dual Concentric" array, with a 200mm multi fibre bass cone and a centrally integrated 25mm PEI dome tweeter that Tannoy refer to as being mounted in a "Torus-Ogive waveguide". In other words the tweeter is set back into the driver array throat for phase and timing alignment. To augment bass output there is another 200mm driver mounted below and in line with the Dual Concentric driver.

To the rear of the cabinet we find a set of four biwire terminals with gold plated jumper strips.

All in all then it is a sturdy well built package built upon a long line of Revolution models that have gone before, yet enhanced even further in this latest incarnation.

Sound Quality

Fresh out of the box they are a pleasant enough listen, so please be patient and if you intend to audition a pair then ensure they have some running hours on them before making any judgements. Thankfully they mellow very quickly and are listenable within an hour or so, so I recommend you connect them up, feed them some music to work with and let the XT8Fs iron their own wrinkles out for a while. As with most speaker running in periods the XT8F speaker will follow an exponential curve whereby they quickly lose the raw edges and then gently and slowly mature to full potential, which in this instance was roughly 20 hours or so, which is pretty quick I say.

First into the CD drawer was Hugh Masekela's "Hope" album and those of you

who also own this album will know that it has a good spoonful of dynamics and subtleties to play with and it was obvious the XT8Fs carry the same DNA their smaller siblings the XT6 speakers are endowed with, although the larger drivers in the XT8F put right the bass power shortfall the smaller speakers were endowed with.

My first impression of the sound they produced was how weighty and dynamic they were, full of verve, sophistication and controlled energy. The kick drum in the opening track of "Hope" was conveyed that it was an actual kick drum being played, while the high hat strikes sounded very clean and metallic sounding. It is the trumpet that defines this track and I have heard some raspy nastiness in some speakers but glad to say the XT8F speakers were not one of them, as the instrument sounded silky smooth and yet still full of vibrant energy and harmonics. All of the music strands stood apart from each other with no clashing. The immense benefit of housing the tweeter within the base cone centre in this Dual Concentric configuration is that you get a huge amount of pin sharp imaging focus from that point source. Sit yourself spang in



Tannoy Revolution XT8F Loudspeaker

the middle of that sweet spot and you can positively BATHE in the imaging and sound staging these speakers produce. Move a foot either way though and that magic becomes a bit ordinary in the way imaging is structured and that very trait means you are going to be firmly glued in that sweet spot for as long as you possibly can. I know I was.

Next into the CD drawer was my old favourite in the shape of Fink's "Wheels Beneath My Feet" album which has a whole raft of benchmarks that review components have to surmount.

The verve of these speakers was amply manifested in the way they could capture the very essence of cymbal strikes. No fizz or tizz, just good clean rendition of wood striking metal with associated harmonics and ringing decay. Once again that sweet spot revealed the venue ambience accurately perfectly and musician placement supremely defined, plus you did get the feeling you were actually sat in the audience around two or three rows back from the stage, which was impressive. Bass guitar and kick drum were well up my benchmark ratings and the Floor Tom strikes that the drummer really does drive down into in the track "Sort Of Revolution", easily managing to shake my listening room. Not only must there be heft and weight to it, it must also be very clean by portraying the skin and shell of the drum, with no boom or overhang artefacts and at this the XT8Fs excelled, so I could feel as well as hear those drum strikes.

Another favourite live album of mine is Peter Gabriel's "Real World" album and this too has plenty of musical variety to keep you entertained across two full CDs, yet his studio albums do very little for me as they come across as too sanitised, whereas this album abounds with free flowing musicality.

Manu Katché playing the drums is highly enjoyable in his own inimitable style, so little wonder that Sting also uses his unique drumming talents, so that same expertise underpins Peter Gabriel's Real World album, even though the recording quality isn't good enough to use as a reviewing tool like I use Fink's live album. Nevertheless it must entertain and engage with you and has some complex musical arrangements to unravel. On both counts the Tannoy XT8Fs easily fulfilled those criteria and then some.

A change of pace and genre too, in the shape of Loreena McKennitt and her "An Ancient Muse" album to see how the XT8F speakers portrayed female vocals.

I cannot begin to describe any of the instruments being played in the track "The Gates of Istanbul" but my attention was

focussed purely on Loreena and her voice, which was beautifully airy and crisp, soaring sweetly and melodically as only her voice can, dead centre stage with the instruments wrapped around her in a shallow arc. The drums in the track had the deep thump and impact which eluded the smaller XT6 speakers that my resident speakers also clearly demonstrate, again no criticism given from me here on this aspect of their performance.

Now this should please the classical music fans out there, because that glorious sweet spot really does unpick complex pieces with ease and orchestra placement is about as good as it gets, at least that is for my limited exposure to the genre. They are equally at home playing Jazz and you can almost picture yourself seated in a darkened smoke filled room listening to some of the great Jazz classics. The closest I can get to this is Dave Brubeck's crisply played "Take Five" in my music collection and even so the drumming and piano playing is rich in dynamics, harmonics and timbres.

Conclusion

I expected the XT8Fs to be a scaled up version of the XT6 speakers I recently reviewed, but there are major differences even though they have the same basic design DNA running through them. For a start, the bigger bass drivers not unnaturally produce a bigger bass output which was expected of course, but there is also a huge amount of control, effortless power and refinement, which in turn is most satisfying to listen to, with the treble and midband beautifully balanced with the bass and that makes this speaker very easy to live with long term. The entire audible spectrum had a slight hint of warmth and sophistication that the smaller XT6 lacked and I suppose that cannot be a critique of either speaker because one is designed for a bookshelf, the other is a big box speaker for open space in a big room, so swap either speaker into the other's environment and neither would be comfortable being there. I was however expecting progression in sound quality moving up the Tannoy hierarchy and the truth is I haven't been disappointed.

I wouldn't pair them into a budget system, because to get the best out of them you need the best put into them and you will be amply rewarded. Pair them with lesser ancillaries and you might not be pleased, because the XT8Fs are very good at highlighting deficiencies as all good quality speakers do.



With nearly 90 years of Tannoy loudspeaker design expertise behind them, they are going to please many listeners for sure.

AT A GLANCE

Build Quality A cut above with real wood veneer finish, good quality terminations and above all, the superb Dual Concentric drivers.

Sound Quality: Locate yourself into that central sweet spot and it really does open windows into the music.

Value For Money: The sound quality and build more than balances the asking price.

Pros: Sound and build quality. The Tannoy badge.

Cons: I'm struggling to find any, so I will conclude with the word "None".

Price: £1,499.00



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Göbel Lacorde Statement USB and Ethernet Cables

By Dan Worth

Göbel Lacorde Statement USB and Ethernet Cables cost 4500 Euros each for a 1.2m length putting them firmly in the luxury, high-end bracket. Dan Worth has a huge amount of experience with digital cables in Hifi and sees what these bring to the rather exclusive party

Göbel Lacorde Statement USB and Ethernet Cables



Receiving the 'Best Sound At The Show' from Hifi Pig after the Warsaw 2016 event and also given AVShowrooms 'Best At Show' award at Munich this year, Göbel High End contacted me to have a look at their latest cable options from the Lacorde Statement range. A USB and Ethernet cable - I think they may have heard through the proverbial grapevine that cables are somewhat of a fascination of mine and I particularly enjoy and employ a digital system.

Finding the perfect cable is like finding the perfect women, you try a few, you may have a short or long-term relationship, but it's only once in every lifetime where you can find a cable loom that no matter what equipment you introduce it to - the cabling is electrically perfect and ends up being a marriage made in heaven.

Passion and Commitment Equals Excellence

Music is and always has been a big part of Oliver Göbel's life, from as early as his memories go back. In fact, his entire family are musicians. For example, his Father played the piano, trumpet and guitar. His Grandfather was a protestant pastor, which is self-explanatory really with music being a huge part of the Church's way of life.

Oliver himself however was much more fascinated in the best possible playback and reproduction of the music. As a benchmark he always had real music played by his expressive family. Oliver's passion for Hifi began very early when he was around 12 years old, making him more and more curious as to how the electronics produced sound, even though at the time he had absolutely no idea how it all worked, he would always disassemble equipment and attempt to reassemble it.

This obsession led Oliver Göbel to his first profession - as an electrician in the field of Communication Technologies wherein he also obtained his Masters Degree. After this he worked for Siemens in the field of Electro-Acoustics developing loudspeakers and applications for other manufacturers.

"In parallel I had come across the technology of 'bending stiff bending wave' loudspeakers", said Oliver, "which was extremely fascinating for me - as this technology offers so many advantages in comparison to the common loudspeaker technologies. That's why I deeply investigated this technology and also researched it during my spare time after work and on weekends. After I made my breakthrough, I applied a patent about my developments on the 'bending stiff bending wave loudspeaker'. Shortly after I got my patent I canceled my work at Siemens and started my own company and named it Göbel High End. I totally stand behind my products, this is why I can lend my name to the company."

That was 14 years ago now, Oliver as well as heavily investing his time in Göbel High End but also has a secondary company which produces OEM products for other companies such as Grundig's Home Cinema systems and Audiorama's statement spherical loudspeakers.

The
presentation
packaging is
gorgeous, a
black real
leather case
with
contrasting
grey stitching
and
embossed
family coat of
arms

Göbel Lacorde Statement USB and Ethernet Cables

"One great aspect in additionally working as an OEM developer and manufacturer for bigger companies like Grundig is that we learned a lot of the importance of quality control and apply a perfect quality control system in order to really assure reliability of our products."

The Manufacturing Of Cables

So why are Göbel now manufacturing their own cable line? Actually, it is very simple. Oliver of course was looking for the best possible cables in order to wire his loudspeakers internally. He tested and auditioned many, many cables from many, many different manufacturers and felt he wasn't obtaining the results he was attempting to pursue.

So, the only real option he told me was to research and investigate even further. Starting with the core wire, different materials, metallurgy and alloys, various cross sections, shapes and sizes of conductor, then dielectrics and dielectric cross sections, differing arrangements and shieldings in order to control the inductance and capacitance along with various heat and cryogenic treatments, connection types between the conductors and the connectors themselves.

Not to mention the thousands of hours of listening; Mr Göbel is an extremely

meticulous man who doesn't do anything by halves, just take a look at the Göbel High End website to discover the intricacies and quality of his designs and finishing touches.

From the initial release of the Lacorde Speaker Cables in 2013 it's taken until now for Göbel who are incredibly stringent and their own worse critics to produce the USB and Ethernet cables I have here for review, with analogue and digital interconnects coming throughout the three year period as and when the team feel that they are absolutely 100% happy.

This same philosophy is employed to all Göbel products within their development building in Munich, Germany. Oliver Göbel conveyed his thoughts to me, referring to companies who have a tendency to push products through, especially cables, then bring out newer versions of the same products consistently over time. Göbel simply build a product until it is in their eyes 'perfect' regardless of how much time and money it takes to get the finished article. Although this isn't a realistic business plan for everybody, Göbel champion themselves on the ability to be fortunate to do so.

"Our goal is to really bring music alive. That is, and always was the passion behind all our efforts, researches and technologies - to manufacture real statement products which bring the ultimate real music experience!"

A very passionate statement from a very passionate and focused man. So, let's take a look at these cables and see what all the fuss is...

The Physical Product

Forget the physical product just now, let's talk about the bomb proof packaging and beautiful way these cables are presented first. The exterior shipping box has enough reinforcement to make its way across the Middle East on a busy day.

The presentation packaging is gorgeous, a black real leather case with contrasting grey stitching and embossed family coat of arms. Internally the velvet comfortably seats the cable, which looks very elegant and feels sleek and luxurious, luxurious, a cable? Yes, the braided soft cotton mix material finish is plush and the bespoke end caps which also act as strain relief, to two of the worst cables to apply strain relief to, feel absolutely solid. The machining detail and fit on the plugs are second to none, with the companies engraved logo giving grip to installation.

Installation could be a little tricky if the rear of your rack is less than tidy, the overall thickness of this cable is very surprisingly flexible, but things are less bendy towards the ends and the cables overall weight can be a slight strain on lightweight equipment, so ensure you install the cable with as much



Göbel Lacorde Statement USB and Ethernet Cables

care as you outdo the associated equipment it's connecting with.

The Sound

The first thing appreciated when I plugged in the Lacorde Statement USB was a calmness that came over the entire system. An additional dose of smoothness combined with an extra sprinkle of resolution simply left my current very high-end USB in the weeds. I didn't realise how much I was missing until I connected the LS USB. Going back to the usual reference afterwards was like listening to a piano that was slightly out of tune my cable really is an excellent listen at around £3000 cheaper. Imagine a graph plotting the frequency response of what the LS USB was able to offer and then drag a fine toothed comb through the wet ink lines removing fine areas of frequency and detail and at the same time these dragged lines smear across the table - an impression of leaving me with minor amounts of distortion in a fog like mist across the overall sonic picture, that can only be assessed with a comparison such as I have here in the Lacorde Statement.

The Lacord Statement USB was in its earliest stages still really, I decided not to cook it on the Blue Horizon Proburn burning in machine, the LS USB was straight out of the box and was already creating a stir. I wanted to hear the progression of this cable, rather than burn it in on the Blue Horizon, as I was drawn into Oliver's mantra. Complete burn in took little under one month, so I assume that we are dealing with solid core conductors, most likely of a triple alloy type but as I am not even privy to the contents of the cable, experience makes this assumption.

Once the cable had continued running in for two weeks it became quickly evident that comparing the Lacorde Statement with my previous Chord Sarum T was futile, Chord have produced a cable which makes most other USBs submit before it, but here I was considering a USB cable that was in a completely different league, leaps and bounds ahead of any of the competition that I had heard previously at least, and after around the five week mark the final molecules of haze, which I only realised existed until after they had gone, disappeared. Bass extended a little further and the outer boundaries of the soundstage gained better shape and agility allowing timbre to flourish more naturally.

Listening to Bliss' 'Wish You Were Here' gave me a new look into the structure of the recorded mix. I've always obtained a three-dimensional, encapsulating sphere of sound in my listening room, which thrives on tracks

recorded like this, but now I was getting a thickness of sound all around me that was now almost as prominent as the front of the stage. Similar to going from an Ordinary CD version to its SACD equivalent.

Drum rolls gained extra extension and solidity with more girth and added control. The tighter leading edges flowed perfectly fluently into the looser extension of the acoustic venue, with a decay that was volumetrically representative.

The vocals were the most liquid I had heard to date on my system and in my room, this track has such a beautiful glow and flow and at the same time also being able to convey so much more information. The Lacorde Statement conveys incredible tone and timbre. The source is incredibly important in the chain of any system and many will state that it's the most important part, myself I feel each component is just as important as each other - price relative with an overall attention on synergy of course, the LS USB has given my source the aqueduct required to the DAC that was more crucial a connection than I had previously thought and I haven't always paid strict attention to my USB cable.

Missing minor undertones gives a perception of a brighter sound and damping the highs with added capacitance for instance warms the sound, stranded cables sound a little spitty because they do not have a linear electron flow. Spittiness can also come from incorrect inductance. Dielectric types and geometries also play a huge part of the whole. There are just so many factors related to building cables which leaves me only imagining how much time and money Göbel have invested in creating the Lacorde Statement range. Being the first and only range of cables from the Munich based company shows how precise and competent they are, as this first and only range has got my full attention.

With a connection as electrically sound and as thoughtfully made as the LS actually makes me wonder whether I should be re-writing previous reviews of the associated electronics as I feel that they are now working to a far greater potential than before. Of course, the influence of other parts of a system effect a new addition in a well-balanced system and vice versa. This is what we know as synergy but imagine if the entire system was coupled together with electrical perfection and the only aspect that required balancing was overall tone, now that would be a dream that many will not achieve but fortunately and currently I'm blessed enough to feel that I have the correct inductance throughout using a full Studio Connections Black Star System (due for

review later this year) and with the addition of the Göbel Lacorde Statement USB the act is now more complete and allows me to feel that whatever I place into my system equipment wise will be able to show its true potential without any bottlenecks allowing me to simply forget about the cable loom altogether.

The additional abilities of the soundstage are also reminiscent of installing the Black Star loom, timing is absolutely on the money and placement accuracy within the transparent and effortlessly complex performance again proves electrical compliance to be just so more precise and materials used to be quite exotic in their precise geometry. Air fills the soundstage like water in a fish bowl allowing notes to flow freely around, amongst, in front of and behind a vocalist with absolutely zero smearing of more complex passages which have a confidence that allows for the smallest of transients to be completely appreciable and easy to focus on within the performance.

The only other time I've come across a digital cable that performs in a similar manner is the MIT Oracle AES/EBU but then that has a slightly different job to perform. Carrying power and data across a cable is an extremely difficult task to manage in a USB, Go Göbel has had the foresight to split the data and power lines to minimise stray electron interaction and I can only imagine what an incredibly low SNR linear supply would offer in addition to the +5v VCC and ground conductors.

Adding The Lacorde Statement Ethernet

In addition to the Lacorde Statement USB, Oliver Göbel had the foresight to send me two of the ranges Ethernet cables in order for me to assess their performance in my streaming setup. If I'm completely honest, conveying the absolute maximum ability of their performance would have possibly more fruitful if I was using them as I2S connections but unfortunately my I2S connections uses the more up to date HDMI protocol. I am able of course to install them between Melco streamer and linear switch and from switch to a linear powered router as well as from the Melco to a Linn Klimax DS which just landed for review and will be backed off of the Melco for its music library due to the Linn having no onboard storage. I also have Tidal and Qobuz streaming services I can use the Lacorde Statement Ethernet cables to support.

I have an existing bundle of ethernet cables from various companies such as Audioquest, Tellurium Q, Meicord, SotM along with some other prototypes which I am testing for

Göbel Lacorde Statement USB and Ethernet Cables

Their performance however, certainly does make a statement - taking my associated equipment to another level of insight, resolution and transparency



companies. I've been exploring Ethernet cables since better quality versions hit the market a few years ago with moderate to good effect over the better constructed more standard fair offerings. My most recent acquisition is the Tellurium Q Black Diamond and in comparison, with all other options available to me is a clear step up over the rest in overall bandwidth, background silence and top end control. I've been considering trying the AQ Diamond after getting one of their Diamond HDMI cables for I2s duties but in all honesty, I feel that again as mentioned above could well be overkill for a streaming cable rather than I2s.

The implementation of Göbel's Lacorde Statement Ethernet cable proved that there is still room for improvement in my system when streaming, even over the Black Diamond from TQ which has been an excellent enhancement to my Tidal and Qobuz streaming the Lacorde Statement

instantly rained in some timing errors I was not aware of having. The LS over any standard Cat7 cable can be likened to a high-end interconnect change over the throw away ones that come with a cheap CD player, so no need to do any comparisons there. In comparison to the TQ which is less than 1/4 the price performance although not relative is a clear step up again, as it was over all the other Ethernet cables I currently possess.

Overall resolution is enhanced with finer inner details culminating in better micro dynamics especially in the top end where the cleaner presentation makes way for more exposure in the black background. The crowd at the beginning of Fink's Perfect Darkness sounded as though it had been fed through its own separate speaker and amplifier combination with me able to hear the individual cheers and screams from each of the contributor's male or female, I could

Göbel Lacorde Statement USB and Ethernet Cables

have probably sat there and counted the number of each, there was that much more resolution on hand.

Upper mids too allowed for a smoother and more controlled rendition of female vocals especially and far better balance and cohesiveness of the uppers and midrange, which was already very transparent but now cleaner and more playful in its transient response accompanied with a little more depth than I was used too.

Our Editor here at Hifi Pig Stuart Smith is not a cable enthusiast, appreciating a good well made cable over the pursuit of constantly trying to better what he has or factor them too heavily into his overall plan when building a system. However, the handful of times he has been to shows that Göbel High End have demonstrated at I receive a phone call soon after with emphatic praise for the Göbel Sound. Göbel High End as a company that produce products with real excellence and as stated in my introduction to this review Oliver Göbel and his team have worked over the past couple of years to get this range of cabling just right and previous system setups its other manufacturers cables have just not been able to push their products to their full potential according to them. What Stuart heard was a combination of the whole, all Göbel's expertise applied to overall system synergy and being of a similar mindset can really appreciate how important the links between our valued equipment have to be.

To champion a cable as much as I champion what I've currently heard from the Lacorde Statement range can be said by some as grave, personally I can understand where all this negativity comes from when it comes to cables? It's due to insane pricing and the spiel the majority of manufacturers want to influence you with. However, like anything in life you need to trawl through the garbage and build relationships with products and companies that offer excellence, combined with solid engineering techniques, along with vigorous R&D - Göbel are a company who cover all these bases and more. Their attention to the finer final details in all of their products is nothing short of obsessive.

With the Linn Klimax DS having been playing continuously for nearly a week now I feel I have a very good handle on its abilities. It's a fantastically clean sounding piece of equipment which conveys great timbral qualities and musical tone. At £15,800 it is one of the most expensive streamers on today's market. This price tag and its lack of inputs - being confined to only one Ethernet input to carry it across a home network and internet based streaming channels, is in fact

more relative to the Göbel's Ethernet price tag of €4500.

My expectations of improvements were thoroughly confirmed when I attached the Lacorde Statement Ethernet from the Klimax DS to the Melco. My first observation was an improvement in dynamic dexterity, the Klimax has a very well-constructed soundstage with great timing and with the LS in the front to back projection flared outwards wonderfully, lending its character to much more air and space. My favoured acoustic genre of music benefited wonderfully, with reverbs and acoustic space becoming even more lifelike with a more naturally informed density across the larger picture.

Bass note were given a slightly more elastic bounce as well as a slightly more effortless flow and roll that decayed more appropriately dependent on tempo and beat.

Vocals remained very solid and engaging and I would express my findings to be more openness with the release of the smallest amount of midrange congestion, rather than adjustments of tonality or vocal positioning, allowing them to be more focused and explicitly true to the artist.

Overall, I would say that the Lacorde Statement Ethernet induced an experience into my system every bit as well as the Lacorde Statement USB, with further potential to be had when used in a direct I2S configuration. I favour many many cables at many price points in a market that is flooded with an over-bearing amount of options. This like anything else is simply derived from experience and knowledge.

Conclusion

My opinion, and one that hasn't changed ever since ever since is that the goal when searching out quality cables and components is to work hard, test whatever you can get your hands on and accept to include cables in your entire system budget. You will then naturally over time find manufacturers that are sincere and capable of building a cable, such as Göbel High End's Lacorde Statement range (if that's where your budget lies) that can lend itself to any piece of equipment or system - allowing that component to express itself with more ease conveying its character without the cable being any sort of bottleneck in one's assessment of the equipment. Rather than being coloured by a link which due to a less than concise electrical match - forcing the character of equipment to be heavily influenced by the cable. The Lacorde Statement cables I have reviewed here have no colour and no influence on the tonal

palette of the music, instead they allow every molecule of inhibited information to confidently flow.

On a personal level I'm intrigued to hear what the rest of the Lacorde Statement range will have to offer a system such as my own, which is already connected with expensive cabling that again I believe has been produced extremely critically, from a brand I know and trust for the exact reasons I have gained respect for Göbel High End.

The Lacorde Statement USB and Ethernet cables are very expensive, more so now considering the diminishing value of other world currencies against the Euro, even to those with the thickest of wallets, which is my only criticism. Their performance however, certainly does make a statement - taking my associated equipment to another level of insight, resolution and transparency. So, if this is the price of cable perfection then I leave the justifications down to you the end-user.

AT A GLANCE

Build Quality: One of the finest built pieces of cable I have come in contact with

Sound Quality: Simply the finest sound I have heard by a fair margin in these cable types

Value For Money: Can you put a price on overall musical satisfaction? Well if they are out of your price range then yes you can

Pros: The most Analogue and effortless sound from a digital cable of this type

Dynamically astute and sincere

Timbrely majestic and tonally expressive

Will extract every ounce of resolution

Increased soundstage size and dimensionality

Build quality, packaging and overall attention to detail is absolutely superb

Best cable strain relief system of any USB or Ethernet to date

Cons: The chunky connectors and thick cable require a system to be organised accordingly

Will be considered as very expensive by many

Price: 1.2m USB or Ethernet - €4500

Some Follow

others

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MCRU No. 75 Mains Cable

By Dominic Marsh

£95 for a mains cable with Furutech hardware and silver plated oxygen free copper (OFC) cable seems to be a bargain in the grand scheme of things. Dominic Marsh finds out

MCRU No. 75 Mains Cable

If I was sold
already on the
cable's price,
specifications
and outward
appearance,
there was yet
another
surprise in
store for me
when I
connected it
up to my
system



For those of you who believe that a mains cable should merely transport the necessary amount of electricity from the wall socket to the IEC inlet of your components without spilling any on the carpet, then look away now, there is nothing here for you to see. For those of you that are still running their hifi system on basic cheap power cords, then read on, as there might be something of interest written here.

With such a bewildering array of cable products on the market these days, it is becoming extraordinarily more difficult for people like me to segregate out what any cable performs like against its competitors. That aside, it is also becoming just as difficult separating out those cables that offer good value for money and deliver excellent sound for a sensible price. Introducing then the MCRU No 75 upgrade mains cable herewith submitted for review, which is just one model in MCRU's impressive range of mains products, ranging from ready built cables like the Number 75 here, all the way up to four figure cable prices, not forgetting DIY options too with unterminated wire and suitable plugs/sockets for buyers to build their own cables themselves.

Construction

If it is true that we buy using our eyes as well as our ears when buying hifi components, then David Brook at MCRU has certainly learned that little secret. This isn't a cable that has been chopped off generic reels of bought-in cable, but I am told the entire cable has been specified exactly and fitted with connectors that are only available exclusively to MCRU from Furutech no less.

The wire itself is said to be silver plated oxygen free copper (OFC) cable, with no details supplied for conductor gauge, or silver plating thickness. It is said that cables containing silver in some form or another have a "bright" presentation, but I have found that only cheap cables with the bare minimum of low purity silver content will display that trait, whereas high purity silver plating with a suitable interlayer between silver plate and substrate does not sound in the least bright. When it comes to pure silver cables, soft annealed "4 Nines" (99.99% purity) silver generally has softer warmer tones and is anything but bright sounding.

Furutech FI-11CU IEC Connector. This is a high grade pure copper IEC Connector, deep cryogenically treated with Furutech's patented "Alpha process" – whatever that might be.

Furutech FI-1363CU UK 3 pin plug, with a similar specification to the connector above.

MCRU No. 75 Mains Cable

MCRU internal filtering built into the plug. No details have been supplied by MCRU of what this filtering consists of and it is not within my remit to dismantle components to check, suffice to say it either has an effect on sound quality or it does not during the evaluation.

The entire cable has an outer shroud of acoustic braiding, which MCRU claim absorbs resonances. Rather than the usual expandable plastic tightly woven braiding, the outer appearance has a series of "bubbles" along the entire length consisting of what appears to be soft cotton interwoven with strengthening nylon weave, so the "bubbles" act as shock absorbers by lifting the cable away from hard surfaces and adjoining cables.

The cable is very flexible indeed and I had no difficulty at all installing it behind my rack.

The biggest surprise of all for me is irrespective of how the cable performs, MCRU have priced this cable at £95.00 for the starter 0.75 metre length, with increments of 0.5 metres in length at £20.00 each.

Sound Quality

If I was sold already on the cable's price, specifications and outward appearance, there was yet another surprise in store for me when I connected it up to my system.

Given that my system is wired from stem to stern with the superb Studio Connections "Black Star" range, I wasn't holding up much hope for any stiff competition at all with this MCRU No 75 upstart at one eighth the price

of the Black Star power cable, but compete it certainly did. In fact, if it wasn't me that was changing cables and someone else had done it, I probably would have quite some difficulty identifying which was which.

From the very top to the very bottom of the audible spectrum, the MCRU No 75 presented a clean uncluttered and thankfully noise-free sound. Bass was both powerful and very well controlled with no overhang or slurring at all. Treble and midband were deliciously crisp and clear, with imaging well beyond the speaker boundaries with good depth extension. Audiences on live albums had a real life and energy to them too.

I pay particular attention to compression effects with any mains product and I can tell instantly if a power cable is restricting current flow by listening out for bass boom and overhang. The MCRU Number 75 displayed none of that, so that was a major benchmark test passed.

Conclusion

MCRU already has an extensive and somewhat bewildering mains cable product range and I was starting to wonder whether MCRU had decided in it's wisdom there was room for yet another model, because I thought they already had most bases covered and maybe MCRU was starting to compete with itself. The MCRU No 75 though I think is an extraordinary product and it has the unique blend of pleasing appearance, unbeatable specifications and a price that won't hurt anyone's pocket for a

huge leap in performance over that basic moulded IEC cable costing a mere few pence given away free in most component's boxes. They are there just to get you going and nothing more in my view and the sooner you buy an upgrade cable the better your system will sound.

The No 75 cable's price and performance sets it apart from the competition by a wide margin and so I award it my Highly Recommended status without any hesitation or reservation.

AT A GLANCE

Build Quality: Starting at just £95.00 for 0.75 metres, I am still scratching my head how MCRU can do such a well built and specified cable for a very reasonable and value-rich price.

Sound Quality: When the MCRU No 75 couldn't be told apart from an £800.00 cable, then that speaks volumes.

Value For Money: I have never said this before but will say it right now... It's a no-brainer.

Pros: With top marks for build, sound and value for money, it has to be on your **upgrade cable list**.

Cons: None.

Price: £95 for 0.75m



Black Rhodium Stream Power Cable

By Janine Elliot

Janine Elliot takes a listen to the Black Rhodium Stream Power cable costing £450 for a 1.7m length...and it's that length the designer believes to be important

Black Rhodium Stream Power Cable



Reviewing interconnects and speaker cables will inevitably be accompanied with misbelief from a number that cables can ever make any differences to the sound of your hi-fi. I have even heard that personally from a few ex-manufacturing friends, 'ex' being the operative word. To be given a mains cable for reviewing is even more likely to carry that disbelief. I am a realist and not influenced by what I call the Peter Belt syndrome; expecting things to be better because you believe and are told to believe they will be. I listen, and then judge. Cables are just as important as the electronics in your prized audio and video collection, each offering its own resistance and capacitance and, hopefully not, RFI/EMI. Mains cables are just as important a part of your hi-fi collection as the other cables in your possession, and whilst some will replace that cheap and thin interconnect cable supplied with your audio or video component, many more will not bother to change that mains cable. However, this type of cable is as important as any other, even if your amplifier has masses of Farads at its disposal.

The new Black Rhodium STREAM power cable could perhaps be more important to sceptics than many others since founder Graham Nalty goes to great lengths in creating the optimum cable. I should actually say lesser 2cm lengths to be exact, since that is what it is; the STREAM is optimised for the best sound quality by virtue of its length. During the design of a new Black Rhodium mains cable they tested one of their existing power cables, the Fusion which uses the same basic silver plated copper conductors as the STREAM, with several different lengths. Listening sessions they did showed consistently that the best sound quality was obtained from cables cut to a length of 1.65m (wire length 1.68m after untwisting). This aligns very closely with the quarter wavelength of the 50 Hz mains frequency which is 1.7m, and further tests showed that cables in multiples of 1.7m sounded superior to lengths slightly above or below, though longer cables in multiples of 1.7m did not match the sound quality of 1.65m. As Graham Nalty informed me;

"On longer lengths 3.3m sounded better than 3.0 m and 3.5m and 2.5m sounded better than 3m. I suspect that two things are happening. Firstly those lengths close to a fraction of the sound wavelength sounded better than other values. Secondly as the cable length increased, it picked up more RFI and more electrical forces between conductor."

For the maths, if you take the speed of sound at sea level to be 340 metres per second and you know that a hertz (Hz) is defined as "cycles per second", you would therefore have 50 cycles over these 340 metres. So (...calculator at the hand...) 340m divided by 50 cycles equals 6.80 metres (or 22.31 feet). A quarter of 6.8m is 1.7m. I had been told many years ago that the very short (0.5m) mains cables I had built for personal use were not a good idea as they were too short, though they did mean for a tidier music room. Perhaps if I had made them 0.85m or 0.425m then that would have been OK. Obviously neither these lengths nor the 1.68m STREAM will be of use in 60Hz countries, unless, of course, a slightly shorter cable is perhaps made; probably just under 1.42m.

Graham Nalty even supplies an 11-point "Highly Essential Steps" brochure with the STREAM (available for £2 separately) to guide you on the importance of cables for your hi-fi, discussing wire material, gauge, stranding and purity as well as insulation geometry and thickness, and whilst asserting resistance and capacitance do make a difference, inductance doesn't affect cables. Cable design is an art, and more than just mathematical calculations.

But there
is much
more to
the
STREAM t
han just
the length

Black Rhodium Stream Power Cable

"There is a lot we discover in Hi-Fi which we do not understand at the time. When I introduced the 'Ninja' cable in 2005 I did not understand at the time why it sounded much more natural than other cables in the range. I now know it was because each conductor was spaced so much further apart from those of the opposite polarity. This had to be done because of the size, but it significantly reduced 'Proximity Effect' magnetic fields"

Perhaps the most important thing in the "11 Highly Essential Steps" is that you shouldn't scrimp on cables, and be prepared to prepare a budget.

The Stream is hand built at the Black Rhodium factory in Derby using high quality silver plated copper conductors. The wires are insulated in silicone rubber due to its low dielectric loss and ensure extremely low distortion due to dielectric absorption effects. This means sound energy is absorbed in the insulation and released slightly later reducing what BR call "highly audible time-smearing distortion". The STREAM also includes the use of two separate and complementary materials that effectively dampen mechanical vibrations within the cable, very important in reducing changes of capacitance. Indeed, it is vital in cable manufacture to prevent the cable components and connectors from moving relative to one another, as triboelectric effects (things like rubbing glass with fur, or running a plastic comb through the hair) as well as electromagnetically induced currents will cause distortion and noise in the cables. The Stream is a thick cable with plenty of damping to stop these movements. 'Transient Phase Distortion' is reduced by using thicker insulation than is usual in speaker cables, increasing the distance between conductors and therefore reducing the magnetic field seen in each conductor wire due to the magnetic field that is created by the current in the other conductor wire. A further increase in the distance between conductors further reduces 'Proximity Effect' distortion, and is achieved by use of the attractive cable braid. Additionally the cable is protected from the distortion caused by RFI/EMI interference by a very tightly braided metal screen. 'Complementary RFI suppression technology' located within the connectors reduces the distortion caused by high frequency noise within the power circuits. Finally the STREAM power cable is terminated with the high quality mains connectors including Permaplug 13A plug that have been regularly used in Black Rhodium power cables, and in the basic £450.00 review sample a Schurter IEC. As Graham Nalty informed me "For the more expensive versions, we have our own 'Black



Rhodium Power' branded plugs in Schuko, UL and IEC sockets which are rhodium plated and specially made for us".

Sound

Most importantly for me was how this cable length and technology affected the music and video. For the tests I put the cable through a series of equipment that was very familiar to me in terms of sound, plus looked closely at the construction and quality of build. The latter was easy for me to give the thumbs up; the thick cable is good to look at and construction and components are of top quality, and it is available with a variety of plugs.

Some cables can leave you with initial feeling of "wow" or "yuk", but I like to take a sensible listen and evaluation. After all, having spent more than a quarter of a century sat in front of loudspeakers for 8 hours a day at the BBC and I need a sound that is honest and not tiring. And certainly this power cable is honest and easy to listen to for extended periods of time. That doesn't mean it is slow. Far from it. I would call it refined and sophisticated. If you want something that changes the sound then look elsewhere, this one just seems to get the best of what is already there but just makes it all behave. Particularly at the midrange. Everything just effortlessly glides.

Playing vinyl using my Manley phonostage I turned to a really lovely new disc of 'Mozart by Candlelight', using the Neumann KU-100 Binaural Head, a live recording from Mike Valentine which works with a high degree of three-dimensionality even on loudspeakers.

The performance of Eine Kleine Nachtmusik at St Martin in the Fields in London, The Locrian Ensemble conducted by Rimma Sushanskaya, gave a compellingly fluid

performance with a sheen that held it all in place. Nothing too bright or forward, just very carefully presented. This surprised me as I hadn't heard the recording quite so judiciously performed. My instinct was to turn to something classical with lots of bite, so I put on Walter Carlos's Switched on Bach, a la Moog synthesisers. Plenty of bass and top-end square, triangle and sine waves produced under the company banner of "Trans-Electronic Music Productions Inc.", an apt name for someone who would later become Wendy Carlos. I loved this album when I first heard it in the early 70's, leading to my own interest and endeavours into electronic music in the 80's. I thought this album would sound gritty and give me a headache – as it did when I last played this recording – but I was surprised at the attention to detail at all speeds of performance and yet there was none of that edginess that even my cat slept through the performance. Normally his ears fidget with anything above 10kHz! The distortion in the recording showed that the STREAM didn't try to cover it up. The electronic recording of Bach has a clarity, texture and detail that no conventional musical instrument could put across in such a way. I always think of Bach as the inventor of jazz, with musical lines interplaying just as in a trio or quartet, but perhaps he also anticipated the synthesizer. Whilst electronic equipment has come so far since this album I could see why Walter/Wendy had to do this album and that it had to be Bach. The interacting melodic lines and changing dynamics and textures could only be performed with such intricacy in this manner, and the STREAM performed it well.

To conclude the vinyl venture the Third side of David Bowie's The Next Day was chosen. Some of you will know I'm not fond of

Black Rhodium Stream Power Cable

David's mastering technique, even if it does come with a high recommendation of Toni Visconti. Hi-compression and pumping the adrenalin, and very centre-stage and no extremes of frequencies, unlike the very 3-D and no compression/limiting in my own albums, I did find the STREAM did make the sound more manageable and perhaps, just perhaps, Toni goes up in my regards. "(You will) Set the World on Fire" didn't quite reach out with the flames that it had when using my similarly priced Ecosse Red Mains cable, but it was actually more enjoyable. How weird is that.

Listening to reel to reel was the next order of the day. After delving into binaural Mike Valentine is now looking at reel to reel, and I would like to feel I have a part in that move. The Black Rhodium into my high-speed Sony TC766-2 offered a very exacting, controlled music, courtesy of "Big Band Spectacular", the Syd Lawrence Orchestra, on a 10 1/2" ATR MDS-36 reel to reel tape. "In The Mood" takes me back to holidays at family friends in Gidea Park near Romford when very young and waking up to Glenn Miller in the morning played from a gramophone playing from under the stairs in the hallway. Great days. Whilst the sound is very perfectly timed there was no loss of detail. The cable kept everything running with a fluidity and excitement just like the day I was there at the

recording session itself. Decaying cymbals at the end of the final track "Anvil Chorus" just showed how nothing was forgotten in this recording or in playback. Brass covered all the pitch and dynamic ranges with no hew, and speed stability was as good as reel to reel could possibly get. This is a mightily good recording and attention to detail in replay was all there but smooth as velvet. Again, the fact I could audition for ever without fatigue but still enjoy it was something I found every time when listening to sources with the STREAM. Midband vocals and strings in a few albums I had copied to reel to reel were similarly musical and human.

Conclusion

Whether or not the 1.7m makes the biggest difference I will never know unless I chop up the cable – which Graham Nalty might be upset with me doing – so I will just have to believe that he has hit on an important discovery and hope for him that others don't get out their measuring tapes. But there is much more to the STREAM than just the length. In all sources I tried to introduce RFI's and EMI's from around the equipment, but again Graham Nalty seems to have sorted that out as well, and 1.7m is a long cable and plenty long enough to introduce such interference in lesser cables. This

mains cable is for me one of the best products in the BR line up, and whilst that 1.7m might mean some reorganising of your hi-fi placement from the mains sockets, that will be the smallest price you will have to pay.

AT A GLANCE

Pros: Excellent midrange frequencies and with all frequencies covered well

Good RFI/EMI protection

Velvety finesse but still very honest, transparent and with good speed.

Cons: Some will still not believe that a mains cable can improve your music

1.68m might be too long for some.

Prices:

Stream UK 13A to IEC power cable 1.7m
£450.00

Stream Schuko to IEC power cable 1.7m
£450.00

Longer cable lengths can be supplied at
£100.00 per metre pro rata.

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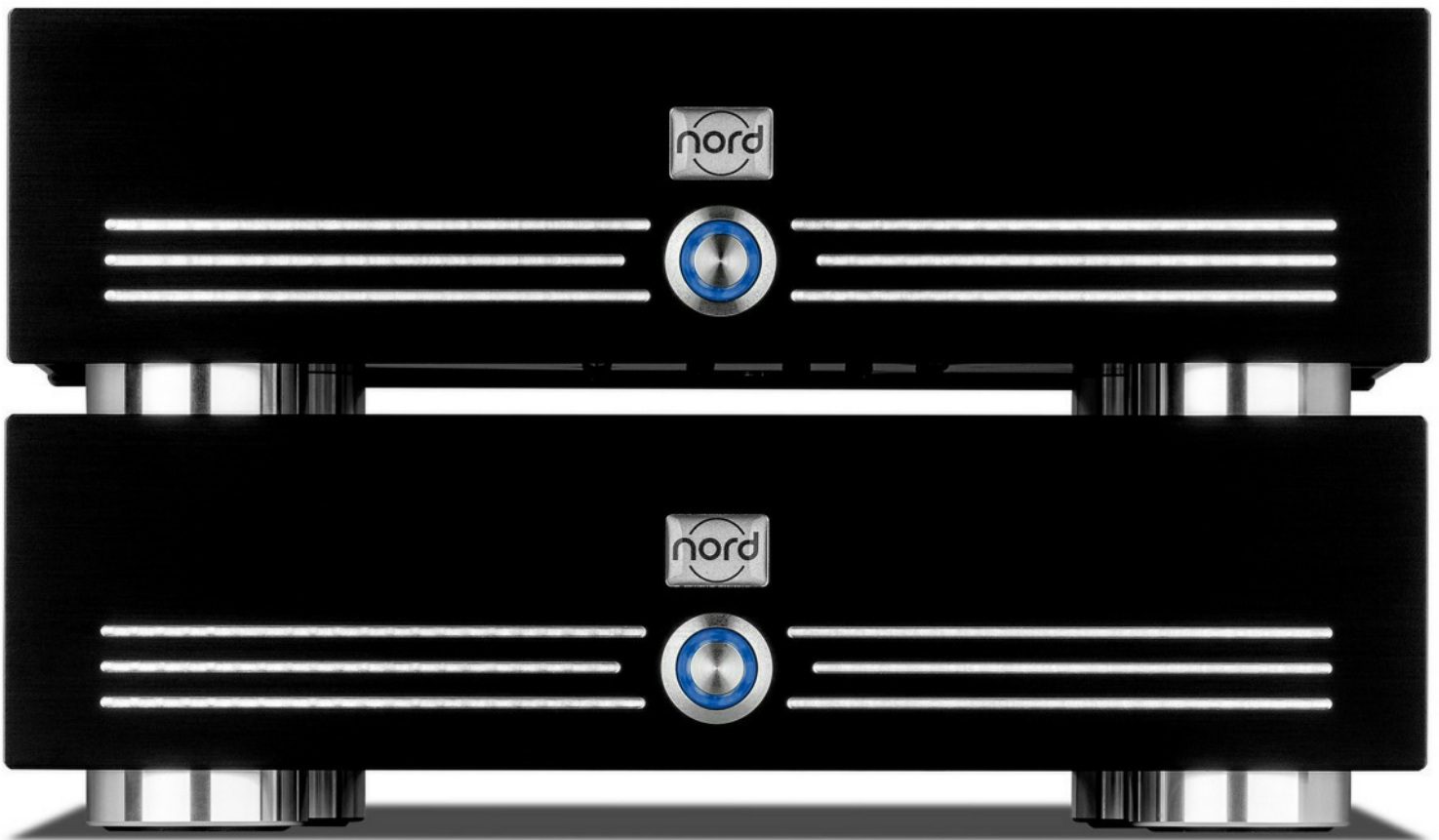
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Sbooster Best of Two Worlds Power & Precision ECO (BOTW) Power Supplies

By Dan Worth

Sbooster Best of Two Worlds Power & Precision ECO (BOTW) Power Supplies cost £300 each and are replacements for the all too common wall-warts that seem to be de rigueur with many audio products. Dan Worth feels the power



Here we have a relatively cheap option that can be retained by the user when changing equipment and which can be used again and again with other equipment of the same input voltage

Sbooster are not new in understanding how important power supplies are in any good audio setup. The "Best Of Two Worlds Power and Precision ECO Power Supply" is more than a mouthful to utter and yes it is one product, so I will be referring to the unit as BOTW. The BOTW supply is the successor to the companies previous supply which was based around a high quality switching supply that was smoothed incredibly well giving a notable improvement overall ripple to standard switching supplies - I've used a couple over the years, still favouring good linear supplies.

Sbooster themselves champion their new BOTW supplies as a fine balance between power, precision and efficiency. At the supply's inlet there is a dual-stage line filter and earth choke, which eliminates any high frequency pollutants from entering the audio-grade transformer, which is precision wound and heavily shielded.

The design of a BOTW PSU is quite unique, Sbooster are able to obtain 50% more power from the electronics than conventional designs, with a remarkable ability to run up to 35% more efficient at the same time - with Sbooster stating "The BOTW Power Supply will only cost a few more euros a year to run than standard switching supplies supplied with electronics."

Sbooster Best of Two Worlds Power & Precision ECO (BOTW) Power Supplies

Towards the end of the DC output cable Sbooster employs their 'split current system'. "The electronic design and components used in this Sbooster version differ from the design of the Sbooster Single Unit add-on upgrade. The power supply of the BOTW P&P ECO audio upgrade provides the split current system with powerful and clean power, so the electronics can do their job profoundly well, which is to buffer the power so that the power supply becomes very fast and able to filter one last time the voltage and current before they enter the attached audio device."

The supplies themselves are in ABS enclosures making them safe from electrical fault shock and have a pleasant, weighty and chunky design concealing excellent component choices. The DC output lead, although fixed and not user replaceable has a female two pin adapter, capable of attaching a whole range of various plugs included in the package. It's very simple to install each connector due to their pin sizes which ensures installation is at the correct polarity.

This review will comprise of three of Sbooster's Best Of Two Worlds power supplies. The items powered by each of these supplies will be the Aurelic Aries Mini, the Audiobyte Hydra Z clock and a Mytek Brooklyn DAC.

Aurelic Aries Mini

The Mini reviewed by me earlier this year is a significant step up in performance for the price range it adorns. It's a highly musical and flexible piece of equipment with a great range of features. I asked Aurelic at the time of the review to send me one of their own upgraded linear power supplies so that I could hear the Mini at a greater potential, unfortunately at the time there were none available so I completed the task without. After Sbooster contacted me to take a look at the BOTW supplies, I instantly requested one for the Aries Mini as it was a prime opportunity to assess its performance with a good solid and clean supply from a company I respected. Wanting a 15v DC supply the Mini wasn't something I was able to add out of my existing inventory due to its less than common rating.

Adding the BOTW supply gave me exactly what I imagined it would. Speedier dynamics and rhythms which made Nils Lofgren's incredible guitar solos come to life, greater precision on leading edges and a darker a background exposed finer details and dynamics really rather effortlessly. I enjoyed the cleaner complexion of his vocal also



which along with the intricate guitar work gained more texture and dexterity.

If I was to create a minimalistic system for an office for instance, the Aries Mini along with a set of KRK actives and the BOTW would be an intoxicatingly addictive bouncy and musical listen. If you're a listener of Pop, Dance or Rock you will love what the BOTW supply does to enhance musicality with the Mini, bringing out more detail and smoothing the resolution extremes. A bit of Nirvana at high volumes and then some old skool Ferry Corsten completed today's listening tests with the Aurelic. The combination of the two forces you to listen to music and forget the electronics entirely.

Audiobyte Hydra Z

My SPDIF converter of choice for many years now have been from Audiobytes (parent company Rokna), they again retain great musicality and smooth digital signals to where they become a more fluid event. Along with the Hydra Z I have a choice of power supplies already - the Audiobyte ZPM which works on capacitor bank stored energy, a Paul Hynes SR5 and SR7 Dual Regulated linears. I do change from time to time and the different supplies have slightly differing effects on the sound. The ZPM doesn't produce such a highly resolute sound as either of the Hynes, yet is very even handed and is a big step up over the USB powered converter. Each of the Hynes then differ in information retrieval with the SR7 DR dominating on detail retrieval and background silence.

The BOTW from Sbooster actually had a nice mixture of the three. There is a definite even-handedness with the Hydra Z and again it has great speed, leading edges and

dynamics, which although not as natural sounding as the Hynes, are a huge improvement over standard installation. The background was also very quiet and the sensitive nature of the FPGA circuit inside the Z seemed to express great control, realism and enthusiasm to the sound with the more modestly priced Sbooster connected, allowing for some incredibly controlled female vocals and good strong bass lines, which gained my attention.

Mytek Brooklyn

Now this is where things will become a little more serious. The Brooklyn is probably the best value for money DAC around and is the heart of one of my active systems. I've again been using this DAC most often with a Dual Regulated Hynes supply as it really does deserve the best I can give it. However since moving the DAC into another active system and leaving the Sbooster to run in I have found myself completely enjoying the performance.

The Sbooster isn't as resolute as the leading Hynes Supply, yet again has qualities of speed that only a design such as it can master. My findings are a little strange to the hardcore Hifi enthusiast but for those of you out there who try to balance an increase in all round performance with the struggle of retaining musical dexterity and cost effectiveness I'll explain...

All too often when auditioning equipment the initial wow factor of a product is its selling point. A customer can purchase and take home a piece of equipment hoping it to perform for them as it did in the demo room, only to be dissatisfied after extensive listening, finding either fatigue or balance to be uncomfortable. When I first installed the BOTW on the Brooklyn I noticed a

Sbooster Best of Two Worlds Power & Precision ECO (BOTW) Power Supplies

perceivable drop in resolution over the DR Hynes but what I lost in plinky plonky details I was hugged with by music in a really endearing way.

The settle in period was shortish with the Sbooster, gaining more detail over the space of a week where it stabilised and established itself, kicking out tune after tune delightfully. I reconnected the IEC cable that goes direct into the Mytek's on board PSU after this time and the extra distortion and grain throughout the treble and midrange proved immediately how profound an improvement the BOTW was. Connecting the BOTW again gave instantaneously more tuneful expression to the bass and vocals again popped out of the soundstage and stood prouder in a much blacker background.

There's really not much to dislike about the Mytek, it's a stunning piece of kit. The Sbooster power supply had seriously done it justice and coincidentally it was around this time that the Sbooster guys contacted me to mention that I should be switching the supply if being used with the Brooklyn to the 13v setting rather than the 12v, simply because it sounds better still.

So like a car audio system, if anyone has gone as far as building one with several amps, multiple batteries and a larger alternator you would most likely have replaced the main battery with a 14v one, which I'm sure you also have heard the benefits of. Now increasing the voltage of any power supply is not a given, small increases are usually acceptable by the internal components of the attached equipment and in this case with Sbooster and Mytek being close and friendly any component concern was put aside with a total reassurance to me. The additional volt or so was switched in and yes there was a perceivable difference, if not a huge one - a slight increase in detail retrieval and a better upper-mid range control gave a stronger overall presentation especially its strong female vocalists and busier music.

Whether on a 12v or 13v setting the soundstage produced with the Brooklyn was spacious and quiet, with smaller harmonic details more prominent than using the onboard supply. I listened to a few tracks from the artist Bliss and the soundstage could clearly be more defined with an overall better flow to the larger pictured details in front and around my listening position.

The Full Monty

With all three of the devices mentioned in this review being capable of working together my next task was to build the front end of my

main system around the three items and the three associated Sbooster BOTW P&P ECO supplies.

The Aries was fed into the Hydra Z on USB and the Hydra feeding the Mytek on AES/EBU. I actually haven't used this exact combination previously so I ran the system using the wall wart that comes with the Aries Mini, the USB power bus of the Hydra Z and the onboard switching supply of the Mytek DAC.

This solution alone is a great little setup and brings the musicality of the Mini combined with the re-clocked information of the Hydra into the Mytek for analogue conversion to the preamp in a wonderfully synergistic manner and made the Aries Mini flourish. However with all three BOTW supplies installed a more audiophile, mature and accomplished sound was reached.

Dynamics certainly came into their own with vocals gaining a much more appreciable range, giving the likes of some of my favourite female artists real character along with being able to convey small dynamics in their vocal ranges and minor breathes and inflections reminiscent of more expensive stand alone front ends.

The system, had great speed in the bass with an overall larger, more detailed and tightly extended lower region with a well balanced and wider more airier top end. Midrange displayed great timbre and the overall tonality was relaxed and natural with energetic transients and great separation - significantly more than the standard supplies.

Conclusion

It's never the easiest of reviews to produce when writing about aftermarket power supplies. If a friend asked me how I found the Sbooster BOTW power supplies I'd simply say they just give you more of everything and excel in speed and background silence, which ultimately allows you to hear more.

However, I have a job to do here and my job requires a certain level of thoroughness. That's why I decided to give small reviews on the effectiveness of their power supplies on a few different items I own. There's absolutely no doubt how effective over standard supplied power supplies the Sboosters are, but to their credit were not totally out shone by the Paul Hynes supplies, which if you are fortunate enough to own, would probably conclude that there really isn't anything out there to better them in the common market.

For €300 I feel the supply is terrific value for money. Especially when connected to expensive equipment that warrants a boost in performance; the Sbooster P&P ECO BOTW offers significant value for money and I will certainly be using a couple of these across my systems in the future.

I've encountered many pieces of equipment in my time that have had their internal power supplies upgraded and put forward as a new model and sold for several thousands more. Here we have a relatively cheap option that can be retained by the user when changing equipment and which can be used again and again with other equipment of the same input voltage. Most equipment has a standard of 5v or 12v inputs for external power supplies making the BOTW something that can migrate with your systems changes and growth.

I would have definitely liked to see a detachable DC lead so I could add my own with fixed ends but the flexibility of the BOTW's construction makes absolute sense. A better aftermarket power cable did also help to improve performance but I'm sure if you relate to the notion that power is incredibly important I don't need to tell you that.

All in all I'd highly recommend the BOTW P&P ECO BOTW Power Supply, its a sure way to obtain increased performance from any product with a less than bespoke off-board PSU.

AT A GLANCE

Build Quality: Not the prettiest, I'd prefer all wires to be on ones side, sturdy and electrically safe none-the-less

Sound Quality: Fantastically noticeable increase in resolution, bass density and back silence

Value For Money: Absolute no brainer

Pros: Excellent flexibility it's a range of output plug sizes

Large range of 11 output voltages

Very noticeable upgrade over stock power supplies

Great musical and audiophile qualities

Great value for money

Cons: Realistically none, but I'd like a detachable DC Cable

Price: €300

Hifiman HE-400S Headphones

By Matthew Sampson

Matthew Sampson takes a listen to the Hifiman HE-400S planar headphones costing \$300 (£239)

Hifiman HE-400S Headphones



This greatly increased the immersiveness of any live recording, and also led me to find another use: Film viewing and computer gaming

Being objective is difficult, especially when you go in with a strong bias. I wanted to be right, more than anything else, because I wanted to feel good about a personal purchase. When I got the Hifiman HE-400S, I already had experience with planar headphones, in the form of my Fostex TH500RP. They were bigger, they were sturdily built, they were luxuriously appointed, and, perhaps most importantly, they were a full USD 100 more expensive. So naturally, I didn't want to get sudden work-related buyer's remorse. Luckily I didn't, but I also wished that I'd bought the Hifiman cans.

The Science:

A quick background, for those new to head-fi, on what exactly planar magnetic, aka orthodynamic headphones are. Sure, you could say that electrical current goes in, audiophile space wizardry happens, and music comes out, but that doesn't cut the mustard. The long and short (Read: Intelligible) version of it is that you have a membrane that's interwoven with an electrically conducting grid suspended between two oppositely polarized magnets. When electricity is applied, the plane of mesh and membrane vibrates within the field of the magnets, creating sound waves. Because of this very large voice element, planar headphones tend to be large, heavy, and very good at reproducing bass frequencies. But before you think that I had to evaluate a pair of magical portable subwoofers, don't worry, they can reproduce the rest of the frequency range pretty well too.

Hifiman HE-400S Headphones

Build Quality

Back on track, planar headphones are, as mentioned, usually quite large, and the HE400S' are no different. They come in a big deep box, and include the headphones, a cable and a 1/8" to 1/4" adapter. Yes, the stock cable terminates in a 3.5mm jack. And there's a reason for that. The construction of the headphone body is mostly polymer, apart from the backing grilles, and structural headband. This makes the HE-400s unusually lightweight, especially considering the reputation that planar headphones have. For adjustment of height, you have a pleather headband under the structural headband that moves up and down on either side independently, in case you're like me, and have a weirdly tall cranium. The earcups are made of a velour material, and are quite comfortable, if you don't mind the fuzz.

The reason for the default cable being 3.5mm is actually one of the HE400S' biggest strong suits. They have a shockingly low impedance, especially for planar headphones, and can easily be driven by most mobiles or DAPs, without the aid of an external amp. However, Samsung mobile phones and integrated sound cards on desktop computers seem to have anemic amps, but most of you wouldn't use those anyway. Even inexpensive amp/DAC combos like the FiiO E07K can adequately

power these, with perhaps some adjustment to the gain settings.

This low impedance hurdle makes them very good on-the-go headphones in the ease of use department, and their light weight means that they're comfortable to wear and carry. The trouble of course still remains that they're planar headphones, which means that due to their open back, they leak like a sieve. These aren't headphones that you'll walk around with, or even listen on in a public place, but they do make fantastic travel headphones for a bit of relaxation in a hotel room, and they're also a great pair for anyone who wants to get into planar headphones without having to shell out another USD 600 for an amp just to drive them efficiently. Of course, when using them with a Hifi system or desktop amp, the included 6.35mm adaptor allows you to really let these things sing. Just because it doesn't need an amp doesn't mean that an amp hurts. The cable itself is removable, terminating in two 2.5mm TRS plugs that are labeled for their proper ear, so you can swap in your own premium cable, if you feel like having a native 6.35mm plug, or if you want some outrageously pure wiring material that's been thrice-deoxygenated and made of pure gold harvested from an asteroid in Venus' orbit.

Listening

Planar headphones, as mentioned before, have a bit of a reputation of being deep and dark in tone, reproducing the lowest of bass frequencies. These particular ones have a lower-end frequency response limit of 20 hz, but that's about where human hearing cuts off on the lower end. This isn't especially low by any standard, but the bass response on these is snappy and pleasingly low in distortion. The upper limit is 35 khz, well above the circa 22khz upper limit of the hearing range of any human, but that's done with the idea in mind that the higher the limit, the less likely the user is to experience distortion in the audible 20-22k range. It was at this point where my buyer's remorse began to set in. My Fostex headphones sound spectacular to me, and they're not bad headphones at all. But the HE-400S' were, dare I say, better in many regards. I put my music library on shuffle in Foobar2000, and just cycled through all these tracks that I knew so well. Some tracks sounded basically the same, but others? My jaw physically dropped. The two areas where the HE400S' shine bright are songs with lots of reverb (So, all that 80s pop that I love) and songs that were recorded in a live environment. (classical, live albums, and anything recorded before the mid 70s, basically) Other types of recordings sound fine, great even, but if all you listen to is hardstyle EDM and Meshuggah, you might not notice the subtleties of these cans. (Which also doesn't solve the issue of you listening to



Hifiman HE-400S Headphones

Meshuggah, but that's for another time.) If you hate hearing the room in Cream's "Sunshine of Your Love," this tells me two things. Firstly, you shouldn't be listening to Cream, because all their songs sound like that. Secondly, the HE400's aren't for you. But if you like feeling like you're actually there at a symphonic concert, or if you love placing the instruments in Charles Mingus' "Haitian Fight Song" or even if you just want to feel like you're there at Clapton's 1991 Royal Albert Hall concerts, as captured on the "24 Nights" CD, then I think you should strongly consider the HE-400S headphones.

I switched off shuffle, and loaded my play queue with every live, orchestral, and live-room recorded song. I deliberately sought out the most difficult songs to play, and looked for stuff that sounded average to mediocre on any other system. So I played Phil Collins' live cut of "In the Air Tonight" from "Serious Hits...Live!" which has always sounded very washed out. It wasn't magically crystal-clear, but I could actually hear bass now, and the treble was significantly more perceptible. The frequencies seem to be tuned exactly to the right point to make reverb more audible, be it artificial or a natural result of live recording. If you look at the frequency response chart, there's a slight peak from 8000 to 10,000 Hz, which is where you'll find frequencies that add the clear, airy sound that I heard with the recordings.

This greatly increased the immersiveness of any live recording, and also led me to find another use: Film viewing and computer

gaming. Because of the high levels of environmental sound, particularly on movies famous for having a good surround or stereo mix, the HE-400s became my optimal choice for viewing "Star Wars" for the umpteenth time or for watching well-mixed films like the 2011 actioner "Inception." If you've seen the latter, there's a particular scene where a man is hit by a car, and his head impacts the windshield, which we hear from the inside of the vehicle. I'll admit, I winced in sympathy. As for gaming, the fantastically Foleyed "Battlefield 1" had me flinching with every bullet that passed my head, and the deep bass response of the planar headphones gave a visceral depth to explosions. Caveat: When viewing films, surround mixdown sounds cool the first few times, but your results will generally be better if you use the stereo mix (if available.) Games often offer a headphone option, so there's no issue there.

The Bottom Line

I want them.

I could have left my entire review at that line. That's how good these are, despite being USD 100 less and having a largely polymer construction, vice the metal of the Fostexes, as well as lacking the creature comfort of the leather earcups. Are they the best planar headphones ever? I can't say. Ask me again when I've listened to all the planar headphones out there. What I can say is that they're a joy to listen to for many different applications, comfortable to wear, and have the added flexibility of a removable 3.5mm plug and low impedance.

AT A GLANCE

Build Quality: Good. A largely polymer speaker housing and metal headband provide a sturdy, light feel. They're not tanks, but they don't feel like they'll fall apart in your hands.

Sound Quality: Very good, astounding on some songs. Incredibly fun for live, orchestral, and older recordings (dust off your jazz albums!) and they handle 80s music quite well. Pleasing high end, especially considering that they're planar.

Value For Money: Excellent. For USD 300 (£239 UK), you're getting a very good package, and they make a wonderful addition to anyone's collection, or even first foray into planar headphones.

Comfort: Light weight and soft earcups mean that these are ready for extended wear out of the box, though the velour-esque earcup material can become uncomfortable if you're sweating a lot.

Pros:

Great for live recordings, classical music, and older small-group recordings. Reverb-heavy records sing as well.

Lightweight and comfortable.

Removable cable for easy swapping.

Very low impedance, easy to drive.

Cons:

Frequency response isn't as wide as some would like.

Highs aren't particularly bright. They're present, clear, and not muffled by any stretch, but if that's all you crave in your headphones, these aren't for you.

The included cable isn't very long, so if you want to plug them into a hifi setup that's across the room, you'll need a new cable.

Price: Approximately \$300/£239

Technical Specs:

Frequency Response : 20Hz – 35KHz

Sensitivity : 98dB

Impedance : 22 Ohms

Weight : 350g

Cable Length : 1.5 m



Kralk Audio KALSU Loudspeaker Set Up Device

By Stuart Smith

Every once in a while a product comes onto the market that is so obvious and so simple that you can't help but think "How did I not think of that?", the KALSU from Kralk Audio is such a product. About six months ago Alan from Kralk contacted me to tell me about this loudspeaker set up doodad and my immediate thoughts were "That's genius" and "Everyone is going to want it"

Kralk Audio KALSU Loudspeaker Set Up Device



What is KALSU? Basically KALSU (Kralk Audio Laser Set-Up) is a little box you pop on top of your speakers that has a forward pointing battery powered laser and one on each side to enable fast and accurate speaker set up. In the smart carrying case you get a pair of KALSUs, a tape measure and a little spirit level. The tape measure is there to allow you to get the same distances from the walls of your room for each speaker - speak to anyone who treats rooms and they will tell you that a symmetrical room is important to get the best sound at the listening position. The spirit level you use to get your speakers level. Measure the distance between your speaker and set your chair in the centre and then move it back to where you would normally listen...we use the cheap and cheerful Poang chairs from IKEA so this is not a problem, but for those with heavier chairs just measure the centre spot and adjust your listening chair accordingly.

Now, pop a KALSU atop each speaker and make sure the front is flush with the front of your speaker. Angle your first speaker so it is pointing where your head would be on the chair, or if you share a couch behind the central position ensuring the beams are just within the edges of the couch. Move to the second speaker and do like wise...fans of Ghostbusters will be pleased to know that we suffered no ill effects when we crossed the lasers. So now you have both speakers firing directly at the listening position or hot-spot.

That's your speakers set up in a fraction of the time it normally takes.

But what are the side lasers for, I hear you ask. Well, this is a nifty feature of KALSU, these lasers show you your first reflection points on the left and right walls meaning you no longer have to employ a second person to move up and down each wall with a hand mirror, a time consuming and boring past-time if ever there was. Once these points are shown you can add room treatment where the lasers hit the walls, we use GIK panels on legs but books, plants and other room furnishings can be added appropriately. Not in the Kralk bump, but a good and useful feature is that you can, by standing the unit on its side and firing the side lasers at the floor and ceiling, also find first reflection

points there too where you can put room treatment, rugs and the like.

Conclusion

I'm not going to go into the sound of the KALSU units as they don't have one, but what they do allow is you to set up your speakers quickly and accurately to get the very best stereo image.

If you want to make sure your speakers are set up accurately for your space quickly and easily then the KALSU really is a no-brainer. If you are a hifi dealer who sets up systems in peoples' homes these units will make your life a whole lot easier. If you have speakers in and out your house regularly then just go buy one. A pair of KALSUs will cost you £120 in the UK but a little more if you reside elsewhere.

AT A GLANCE

Build Quality: Nicely put together but without frills

Sound Quality: Allows you to quickly set up your speakers for best image but obviously no sound character of their own.

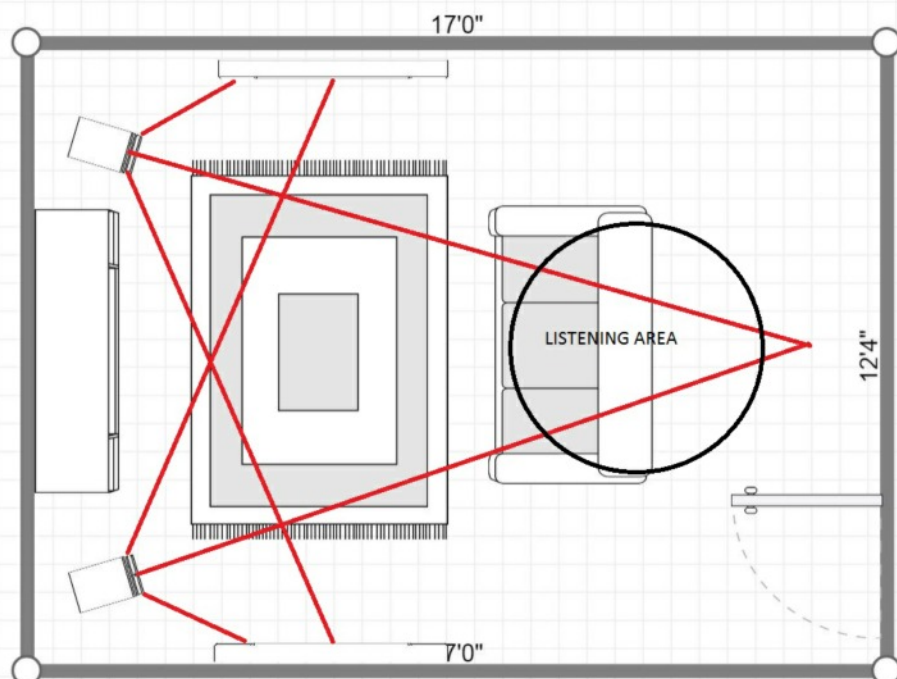
Value for Money: For the amount of time these things save they offer excellent value for money.

Pros: Easy and effective.

Cons: Really, why did I not think of this!

Price: £120, a little more if outside the UK.

KALSU Laser setup

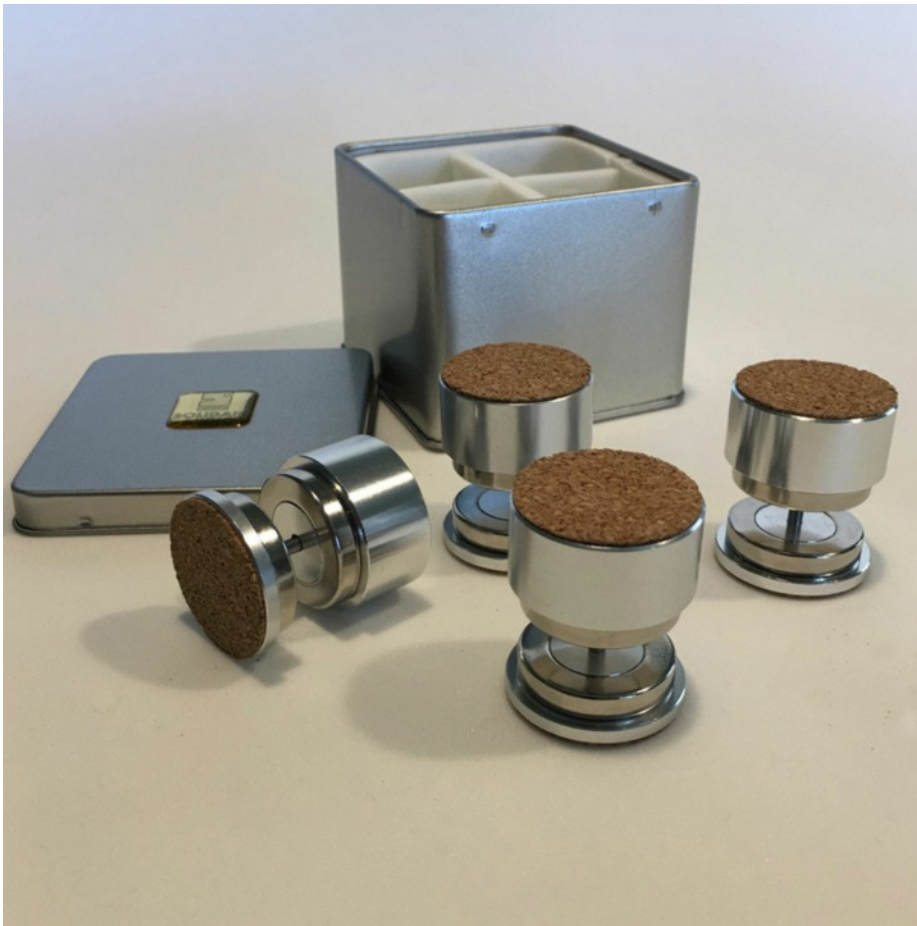


Solidair Audio Ukishima Magnetic Isolators

By Dominic Marsh

**Dominic Marsh
experiments with the
Solidair Audio Magnetic
Isolators in this review for
Hifi Pig**

Solidair Audio Ukishima Magnetic Isolators



I will begin by saying that I am no stranger to using isolation supports employing magnetic levitation principles, as a good few years ago now I owned a SAP Relaxa 1 support that really was effective under my then CD player. Of course I did try it under my turntable, a Logic DM101 as I recall, but that already had a sprung subchassis suspension system, so it was less effective in that role, plus the weight of the turntable was just a bit too much for the poor old Relaxa to bear comfortably. It worked rather well though on a Technics direct drive deck which was much lighter. My biggest surprise was the effect it had on my power amplifier, which, given that it has no moving parts and being solid state electronics, was not as prone perhaps to microphony, as say a valve amplifier can be.

It was with the SAP Relaxa that I also discovered (the hard way) just how powerful Neodymium magnets can be when two magnets fell out of their housings while moving it and I picked up one magnet in each hand and they drew together rather rapidly with my finger in between. That resulted in a huge blood blister on my finger and no small measure of profanities from me. Hifi can be a rather dangerous pastime you know.

Solidair Audio is run by a gentleman by the name of Miles Kilby, based down in the far bit of Cornwall before it joins the Atlantic. I had

the pleasure of meeting him when he came over to discuss how best to install the supports into my system.

The Solidair supports are supplied as individual units in sets of 3 or 4 (more can be added), rather than 4 pairs of bare magnets fitted rigidly into a Perspex chassis as per the SAP Relaxa platform.

Although the idea of harnessing the forces that high flux rating opposing magnets generate is a good one, they also tend to throw themselves sideways away from each other at the same time as part of that force, so keeping lateral forces under control is very difficult without introducing friction. The SAP Relaxa 1 kept the lateral movement under control by fitting vertical stainless steel guide rods at each corner of the bottom plate, with roller bearings fitted to the uppermost plate which ran up and down the vertical guide rods, preventing any sideways movement.

The roller bearings were there to minimise that inherent friction. Solidair have addressed that issue by putting the magnets inside their non-ferrous cylinder so that only vertical movement is permissible from the units.

The range is quite extensive and arranged by the weight carrying ability of each product.

Solidair Audio also produce isolation platforms in clear Perspex for turntables and

such-like, custom feet for the Michell Gyrodec turntable, with custom build requests catered for.

At this point I would normally give an indicator of pricing, but the range of products is quite considerable and can be easily viewed on the Solidair website.

Construction

What I can best describe as a 'piston' arrangement, with the opposing pair of magnets fitted inside a cylinder, with a stainless steel rod extending down to a "foot". The outer case of the cylinder and the "foot" are made of non-ferrous metal, in this case, polished and lacquered brass. Miles has just released another variant using aluminium to replace the brass components, primarily to reduce costs and another variant using wooden machine turned Burr Oak cylinder casings. Most of them are of fixed length, although one of the models could be adjusted for height. The latest models have cork discs attached top and bottom. A set of four loudspeaker "bridges" was also supplied which consists of a substantial bar of stainless steel wider than the speaker it is to be fitted to, with a magnetic unit at each end, two for each speaker fitted fore and aft underneath. Once mounted on these bridges the speaker does sway about at the slightest touch and seems to go entirely against the grain of the ethos of keeping the cabinet sited rigidly on the floor using spikes or conventional feet. Incidentally, my colleague Dan Worth was evaluating a set of Townshend speaker supports at the same time that uses springs instead of magnets in their construction and his floor standing Ayon speakers were also swaying about just as much. Did make I laugh.

As well as my resident floorstanding speakers, I had a pair of Audiovector SR3 Avantgardes submitted for review which were considerably bigger and heavier than my own pair and the Solidair bridge supports coped admirably with the additional size and weight.

Sound Quality

Using no rationale at all behind the choice, I decided to fit the speaker bridge units first under my own resident floor standing speakers and marveled at the way they swayed about like a Weeble without toppling over. Don't know what a Weeble is? It was a toy brought out many years ago that had a spherical base with a weight inside which made the character roll about back and forth, side to side. Not connecting with that? Try visualising an intoxicated person unsteady on their feet while standing still then, with just a

Solidair Audio Ukishima Magnetic Isolators

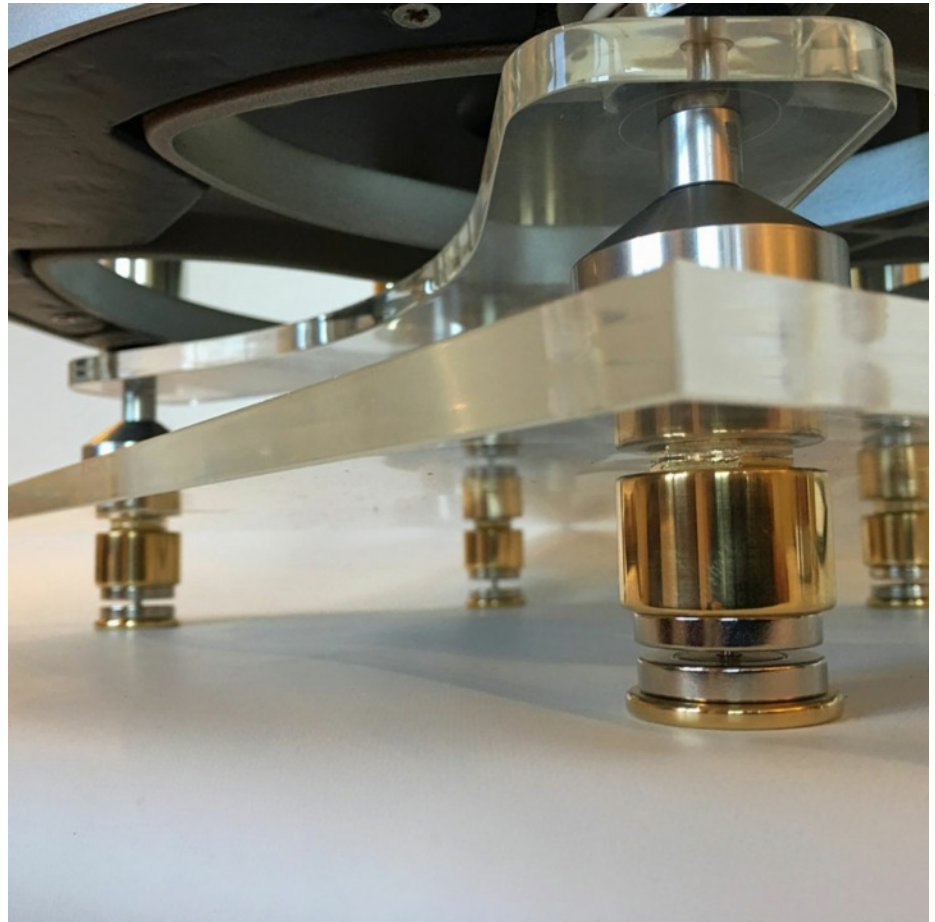
bit more tilting in any direction. Have we got there?

Anyway, into the CD player went Blue Nile "Hats" CD and pressed play. I was blown away by the sound improvement, not in an absolute night and day kind of difference, but in the way the bass had acquired just a bit more power and control at the lowest octave, plus subtle changes in inflections from bass guitar and kick drums, with the former having a deeper growl to it and the latter having a shade more "thump" and energy. Dominic was impressed.

Spurred on by that, my next move was to fit a set of four units under my CD player, the much revered Sony XA50ES which tipped the scales at a mere 14 kilograms. I will say now it was not easy fitting the units under the player, as 14kg is rather an unwieldy weight holding the player up with one hand and fitting two units at the front and two at the back without mishap in a combination of some skill and a big bucket of luck, especially so as the player was sliding about on the rack for good measure. Another pair of hands would have been very useful at that juncture. I tried to place the units equidistant front and back under the chassis, but the player was very much lopsided as the heavy mains transformer is situated to the left hand side of the chassis. Moving the right hand pair towards the centre levelled it all up nicely.

After all those exertions I could not hear any improvement in sound quality, which somewhat crushed me after the immediate success I had with the speaker bridges. Had started the process and had to continue, so I then continued with adding the supports under my power amplifier, but I came across my first major snag which I had not foreseen.

The CD player was on the top shelf of my rack so installing the supports was (relatively) easy, but not enough headroom in the shelf spacing further down the rack for power amplifier and the supports. My rack consists of 8 shelves of 10mm toughened glass held up by 4 long threaded rods with nuts holding each shelf in place above and below. Trust me, I do need 8 shelves for my system and review components, so a commercially built rack of that size would cost right leg/left arm kind of money, so this arrangement was the best option for me without making me a pauper. The major benefit of this arrangement though is the shelves are adjustable for spacing. Out came my trusty 10mm spanner and loosening off and tightening the support nuts managed to create enough space between shelf 3 and shelf 4 for power amp, supports, plus keeping some space above the amplifier



for ventilation. Potential purchasers should do some measuring to make sure there is enough space between shelves on your own rack and allow for adequate ventilation where necessary.

When an hour later I had adjusted shelves, juggled the supports under the power amplifier and fired up the system again, I was just a bit miffed when the improvement in sound quality was of a very low order – around 10% at a rough guess. My power amplifier had a centrally mounted mains transformer so balancing was a lot easier than the CD player. The final item to be "levitated" then was my pre-amplifier, which again was on a central rack shelf with no room for it and the magnetic supports, and so that 10mm spanner got warm once more and some more perspiration thrown in too . . . Who said reviewing was easy?

This time though there was much larger leap forward in sound quality, which led me to think that it was perhaps having all the components mounted on the supports that was key. There was only one way to find out. I took out the supports from underneath the CD player and I noticed a drop in sound quality much larger than I heard from installing them in isolation, then removed the supports from under the pre-amplifier and that too was a bigger drop in performance than when putting them in. Interesting.

To really mess things up during the evaluation, I then decided to buy an Audiolab Q-DAC at a bargain price, which then replaced the pre-amplifier. Luckily though that occurred just before Miles was due to visit and that was a question that needed to be answered; "What about very light components Miles?" says I, pointing at the Q-DAC. "Aha!" says he, "glad you asked" as he pulled out a set of newly designed tiny supports sporting the new aluminium cylinders. These went under the Audiolab Q-DAC and the system was really singing then. As an experiment I removed them from under the Q-DAC and that magic vanished immediately, so my conclusion was that it was all the units working together that produced that fine sound and that applied too if any one of the supports was taken out, yet didn't manifest as an improvement when installed individually.

So what effect overall did the supports make to the sound? It really was a classic case of bass tightening, yet losing none of the power. The floor tom whacks in the track "Sort of Revolution" on Fink's 'Wheels Beneath My Feet' album had real weight and body behind them, the best I have heard them yet, to be truthful. Treble and midrange seemed to leave the speaker cabinets entirely and just hung freely in space, so imaging was three dimensional and almost walk around realistic. When I bought a pair

Solidair Audio Ukishima Magnetic Isolators

of Pylon Audio Diamond Monitors complete with their own dedicated stands to replace my floorstanders, I wasn't going to risk placing these speakers on the bridges as the speakers are not coupled at all to the stands. However, a pair of Audiovector SR3 Avantgardes was soon wobbling about nicely on the bridges when they arrived for review and the already excellent SR3's sound quality moved up a notch or two.

Conclusion

My own conclusion of what I experienced during the evaluation is that just one set of supports isn't going to provide a big improvement in sound quality on it's own, unless of course that one particular hifi component you own is prone to high levels of microphony. I didn't genuinely think that any of my components suffered from that problem, but a complete set of these Solidair units from stem to stern proved me to be incorrect and am not ashamed to admit that.

None of my components are valve based, nor do I have a turntable now and if any component was likely to need isolation then it would be the Sony XA50ES player, although with a deadweight of 14 kilos and a central laser transport mechanism, who would have thought it might be susceptible to vibration? Maybe the toughened 10mm glass the rack is made from is part of the problem, I don't know, so if you have a

wooden rack would that change the outcome from what I have experienced? What I do know for sure is that now they have all been returned to Solidair Audio, I do miss them and the sonic magic they produced.

I realise that a complete set of these isn't going to be cheap, but when they are as effective at remedying a problem you didn't even realise you had in this first place, then their value becomes obvious and if you want maximum performance from your system then they could be an essential purchase.

AT A GLANCE

Build Quality: Exceptionally well made and nice looking too.

Sound Quality: It seemed to be a case of the whole being greater than the sum of it's parts.

Value For Money: When it solves an issue you never realised you had, then the value becomes clear.

Pros: These really do reveal the full sonic potential from your system.

Cons: You need some dexterity to fit them under heavy items. Ensure you have enough room in your rack for component,

supports and maintaining necessary ventilation before purchase.

Prices:

Ukishima 6 Aluminium £25 each £100 set of four

Brass £45 each £180 set of four

Burr oak £50 each £200 set of four

Ukishima 10 Aluminium £30 each £120 set of four

Brass £52.50 each £210 set of four

Burr oak £55 each £220 set of four

Ukishima 15 Aluminium £35 each £140 set of four

Brass £75 each £300 set of four

Burr oak £90 each £360 set of four

Height adjusters for oak and brass feet £6each

Acrylic platform 350x450mm £295

Speaker suspension bridges from £580 set of four



Wynyl Record Cleaning Fluid

By Dave Robson

Wynyl Record Cleaning Fluid offers a novel way for you to clean your black disks. The stuff costs £19.99 for 500ml and here Dave Robson gets down with the sticky stuff.

Wynyl Record Cleaning Fluid



The fluid is comprised of a pair of polymers, a wetting agent, antistatic agent, non-ionic surfactants, water and a cleaner

Having only a small record collection, as CD arrived pretty soon after the Hifi bug bit, my records are all mostly old from the 80's. I have bought some new "old" records and some secondhand as I think some recordings just need to be heard on the format they were intended for. I am embarrassed to say, but my record cleaning regime stood at a litre bottle of Isopropyl Alcohol and one of those velvet covered sponges. That and several teenage parties hasn't left my little collection in the most pristine of condition. I have seen the "Wood Glue" video on social media but thought that was a little too risky. While surfing around Ebay, I did come across this Wynyl cleaning fluid, I watched the associated video, and it was the same technique as the wood glue. Better than that it was specially designed for your precious records and looked a simple process. I purchased a couple of the tester sizes 50mm (£2.50 inc free delivery UK). The bottles arrived a couple of days later in a sealed plastic bag containing the fluid, syringe with applicator attached and instructions.

For the test I used 3 LP's, two copies of Simple Minds "New Gold Dream", one my old original copy, the other a brand new Abbey Road Half Speed Master, and Dire Straits "Dire Straits" which I recently purchased second hand and which was quite grubby. I gave both the older LP's a standard "me" clean and popped them onto my Turntable. I listened for a few hours both sides a couple of times. I then popped on the new Abbey Road simple Minds as a reference point.

First off, I applied the fluid as I thought fit to Side A of simple Minds. The easiest way is as the instructions suggested, by making a wavy line from the outer to inner edges. I then used my finger to gently smear the fluid evenly around the record. The depth of fluid looked a little uneven but soon levelled itself out. I added the little bit of paper as was advised to the edge of the disk to aid removal of the film once it had dried. I left this

Wynl Record Cleaning Fluid

overnight to dry fully. The next day I started the process to remove the now fully dried fluid that had turned into a thin film. I lifted the paper tab that I had applied (don't forget this as it makes starting the process easy) and started to pull the film up off the disk. It's quite tough (the film, not the job) but as I worked my way across the record I kept ripping the film, this made it very hard and left some of it behind. I realised by trial that the mistake was mine. That I in my stinginess had put the fluid on too thin! No panic! I set about the second disk, Dire Straits was placed on the table and I set about using about a 3rd more which equates to about three 5ml of the supplied syringes full. I then just happened to notice on the Instructions the advised amounts to use. It says 14-16ml for a 12" LP. I would say this was the right amount per side, it also advises not to go to the outer edge, but from my first attempt I found it beneficial second time around to do this, but I would say not to go to too far over the run out section as per the instructions. I place Mr Knopfler's finest

outside on a flat surface on a nice warm day. It took about 2 hours to dry. I brought it in and let it get to room temperature. Under normal conditions it recommends 5-6 hours drying time. It's easy to spot if it's not fully dry too as it looks wet.

This time round, I decided to work around the edge of the disk first, lifting the paper tab and methodically going around the edge first, then slightly more until it came away completely in one piece.

The fluid is comprised of a pair of polymers, a wetting agent, antistatic agent, non-ionic



surfactants, water and a cleaner. Once it's off the record it's quite a tough material. You can see every groove and indentation from the record surface. I re applied the fluid to my first record to see if it picked up the bits I had left behind by my first bodged attempt. This then came out in the same perfect condition as the Dire Straits disc. Happy with the method and the look of the LP's, I then proceeded to the turntable to see how they sounded. I cleaned the stylus and set about playing both albums. The results were good! The recording seemed brighter and more detailed, the bass sounded a bit deeper and tighter. There were less pops and crackles and less rumbling. An all-round improvement. It was certainly a closer match to the new copy of the Simple Minds for clarity. How the Wynl stacks up against professional record cleaning machines I'm not sure, as I have never used one. This is quite a simple process and the logic behind it is sound (no pun intended).

Conclusion

This is a great product, it does what it says on the tin and is simple to use. For me my usage would be to clean old or second hand vinyl as a first course of action, then have a good standard cleaning regime.

AT A GLANCE

Pros:

Does what it's advertised to do.

Cons:

You need to use a more than the instructions say.

Price: £19.99 for 500ml

You can see a short video of Wynl in action [here](#).



LG 34UC79G ultrawide curved monitor



At a time I was literally knee-deep in tech a rather large box from LG arrived. Inside sat their LG 34UC79G curved gaming monitor. Thankfully, a kind colleague offered to review it for me.

So, without further ado, here is what my friend, colleague and keen gamer, Mohammed Islam, thought of the LG monitor.

LG 34UC79G design

It's HUGE!

Monitor specs:

- 34-inch Curved Ultrawide
- 2560×1080
- IPS Panel
- 1ms response time
- 144Hz refresh rate

This is not a monitor for small desks. Not only is the display itself wide, but the stand is quite large too.

The base is matte black plastic with red accents. That striking

colour-scheme continues along the back of the stand.

It has a mostly bezel-less design other than the bottom lip.

Build quality is good and feels safe even though there's a lot of it.

Gamers will find the 120mm of height adjustment and options for tilting back and forward useful. The screen is also compatible with 100mm VESA mounts.

However, the screen can't be swivelled, which is usual for curved widescreens. I don't think I have the space for it to swivel anyhow.

The 34UC79G offers two HDMI 2.0 ports and a DisplayPort 1.2 connection alongside two USB 3 ports and an audio jack. There are no onboard speakers, which is fine as most gamers will have their own.

Saying that, my speakers did cover the edges of this beast.

LG 34UC79G performance

Coming from a 27-inch 2560×1440 there was a noticeable difference in pixel density.

Navigating through the LG's menus was made effortless thanks to the neat joystick under the screen.

The screen's curvature was very noticeable when standing to one side, but not at all sitting directly in front. This is a good thing).

The mouse glided through the picture thanks to the 144Hz refresh rate.

Colour reproduction was really good with deep blacks. The high contrast ratio also makes the colours really pop.

Thin bezel edges is a welcome addition to this monitor.

When watching movies the bezels are unnoticeable.

LG 34UC79G ultrawide curved monitor

Unfortunately, due to most content being catered to 16:9 aspect ratio the screen has large black pillars on either side.

To be honest this is something I got used to after a few days of use. Due to the monitor having unnoticeable bezels you forget about the extra screen real estate that's not in use.

Gaming

Gaming was a whole different ball game. The majority of early access titles had the pillar issue, but this was mostly only during the menu screen. Thankfully, these made full use of the screen once you got passed the intro. A lot of the AAA titles didn't have this issue.

The 144Hz made gaming incredibly pleasing.

Having the extra screen space was an added bonus in FPS games where being able to see that little bit more of your surroundings made a big difference.

LG 34UC79G review conclusion

After using the monitor for a few weeks I had fallen in love with it. I had also completely forgotten that the monitor is 1080p and not the 1440p that I thought it would be. I really found it difficult to pull myself away from.



Gaming on this monitor was extremely pleasing and watching movies was pretty good too.

When coming to terms with having to send the monitor back. I felt gutted. It was like parting from your child and settling for a cat.

Going back to my old monitor it felt small, uninteresting and boring. I also missed the aggressive design language of the LG, as well as that neat joystick to traverse through my on screen menu.

The 60Hz display was very noticeable. It felt like my brain slowed down.

The only gripe I had with the LG monitor was the fact that it lacked

G-sync and its maximum res being 1080p.

The monitor does, however, have AMD's free sync technology but this was useless to me as I own an Nvidia GPU.

Having 1440p and G-sync would be a no-brainer. But, for those in the market looking for an inexpensive ultra-wide with a whole wealth of perks from a reputable brand, this is a must have.



Eclipse TD508MK3 speakers

The Eclipse TD508MK3 continues the company's egg-shaped design of the desk-mounted TD-M1 we had in to review almost 2 years ago. As the latter speakers are being discontinued, we thought we'd better check out their larger siblings.

As soon as you see the TD508MK3 you know you've got something from the Eclipse stable.

The jet-engine crossed with a Pixar lamp looks and single driver are unmistakably Eclipse. They certainly stand out amongst a world of rectangular boxes – no matter how clever those boxes are, or how good they sound.

Eclipse TD508MK3 design

The Eclipse TD508MK3's cabinet, like others from the company, is ovoid for rigidity and to avoid any reflective edges, which can spoil the stereo imaging.

I have covered the principles of the design Eclipse uses in my earlier review of the TD-M1 desktop system. The TD508MK3 is larger than the TD-M1 but works on exactly the same principle.

Here you have an 8cm fibreglass driver which is utilised to produce every frequency you are going to hear.

Each speaker weighs in at 3.5kg, no doubt much of which is down to the mass anchor and diffusion stay – more on that later.

The speakers measure 180 x 289 x 268 (WxHxD) and so are quite compact.

The ones I have been sent are white. The finish is actually slightly pearlescent. If you get them in the right light there does appear to be



fine metal flakes in the casement. Nice touch.

They do come with little protective grilles but, as I have no kids or pets, I prefer them off.

Stand

Even the stand design of the TD508MK3 has been carefully considered.

It is what Eclipse calls an 'all point' contact design. This is achieved by using three steel legs mounted in the top of the stand arm combined with a specially machined locking ring.

This design eliminates undesirable vibrations, ensures tighter lower frequency performance and allows for angle adjustments. The latter point is quite an unusual option for high-end speakers.

Adjustment of -10 to 30 degrees of the head angle offers a wide range of flexibility in the installation to

suit the individual listening environment.

Because of the clever stand the speakers can also be mounted on the ceiling or wall. Nice.

Eclipse TD508MK3 performance

o, you have a single driver in each speaker being pushed to frequencies that are well beyond any normal driver of the same size. It goes without saying that these are custom jobs, and also extremely light.

The driver is bolted to a heavy metal mass anchor. This ensures that all of its movements are converted to sound rather than wasted through resonance.

The enclosure is supported by the anchor, but decoupled from it to reduce any mechanical energy transfer. This way cabinet vibration is minimal, and so it contrib-

Eclipse TD508MK3 speakers

utes far less to the overall sound than would usually be the case.

The whole enclosure is dampened and tweaked to help that single driver produce the required extension.

This all enables that little bit of fibreglass to extend down to 60Hz (Eclipse claims an absolute roll off of 52Hz).

Why put a single driver through all of this? Well, it means that there are no integration issues for a start. Furthermore there is no need to add a crossover circuit that could introduce distortion and/or sap detail.

Another benefit is that it also removes any phase issues that are common with many two-way de-

signs, which can suffer from lack of coherence between the drivers.

Finally, smaller drivers are usually selected for the higher ranges because they move faster. This is partly the reason why, in my life as a bassist, I choose bass cabs with 10-inch drivers in rather the 12- and 15-inchers that I have used previously. They might not move the same amount of air but the speed and clarity is much better. Ever wonder why Ampeg's 8x10 bass cabinet, AKA the fridge, is still at the top of many bass players' want list?

Sound quality

Well, I reckon that they look great. But, how does the TD508MK3 sound?

Where I have been previously impressed by Eclipse speakers is their 'speed' and accuracy. Thankfully, the same can be said of the TD508MK3.

These speakers really do have the knack of picking out subtleties and reveal nuances others might miss.

What I did find with the TD508MK3 is that a little more care is required during set up. This might be because I had them simply sat atop of my usual Atacama stands, rather than the sleek Eclipse poles though. Whatever the reason, it took some time to get their toe-in just right for my room. Having the ability to angle them upwards slightly helped greatly.

Once done, however, I was rewarded with an intricately layered sound-stage.

Their punch and immediacy is truly amazing. This is generally the stuff of studio-grade active monitors.

Music

Accuracy is nothing without musicality though. Thankfully, the Eclipse's rhythmic ability is also noteworthy.

They are able to grab the initial bite of a plectrum or bow against a string, as well as the tail-end of a decaying note.

More importantly, they are able to achieve this whilst maintaining context.

Tempo and mood changes are clean and unclouded, this is great news for Jazz, Fusion and Prog fans.

They handle complex pieces really well. Orchestral performances are remarkable for their clarity and placement with the TD508MK3's not crossing instrumental streams.



Eclipse TD508MK3 speakers

The only time I would have liked more from the Eclipses is where bass needs to be given more prominence. This is most evident when playing movie sound-tracks or some electronic music.

Here the bass lacks some depth, warmth and presence. It is still punchy, accurate and stated, however. It just fails to fill the room and envelope me in the way I would like.

Alternatively, the higher frequencies sound open without any harshness. It would be great to compare these with speakers sporting good tweeters, such as the Dali Rubicon 5 though.

That said, the TD508 MK3 have proved their ability to present Jazz, Fusion, Classical, Punk, Pop and Metal with equally enjoyable results. If, like me, you find yourself wanting more trouser-shaking lows, Eclipse do have a mighty fine range of subs on offer.

However, if you listen mostly to acoustic / singer-songwriter, Jazz or the kind of music that has that 80s-like production then these speakers will leave you smiling.

Similarly, if your penchant is for texture, detail and accuracy then you could do a lot worse at this price point.

Eclipse TD508MK3 review conclusion

The Eclipse TD508MK3 are excellent all-rounders. Not only are they enjoyable to listen to, they look unlike any other speakers beyond the brand. Put a pair of these in your living-room and be prepared for remarks from friends and family. For added interior design plus points, opt for the Eclipse stands too.



I did find bass depth lacking in parts but that little driver does perform admirably. Musical transitions in complex pieces are handled with precision and accuracy – and there's the pay off.

As I mentioned, if you need those low lows, check out the company's additional subs. They too are quite remarkable in their own right.

Furthermore, if you are looking for 'loud' speakers, then you should look elsewhere. The TD508MK3 are refined and major in detail rather than outright power.

Add in their flexibility regarding placement and their integral stand being able to be used for

wall/ceiling fixing, and it also makes them an ideal choice for home-theatre systems as well as Hi-Fi systems that need to complement interior design.

Price and availability

You can get the Eclipse TD508MK3 from Richer Sounds for £960.

If you fancy adding those rather sweet stands, they'll cost you another £516.

Acer Nitro 5 gaming laptop

You may have seen my Acer Nitro 5 hands-on video that I took whilst being taken on a rickshaw tour of London. Well, I took that laptop home and have been using since. It is now review time.

As with any product, it is easy to get the specs if money is no object. £1200 iPhone? No problem.

£200,000 turntable? Sure.

£9000 gaming laptop? Sold.

However, it's the mid-range where the truly interesting things happen. How much can a company offer when working to a tight budget? That is where the real skill is.

We all realise that there will be compromises to be made on the way, but then it is the choices that the brands make that will win or lose our money.

The Acer Nitro 5 series starts under £900.

Whilst that might not be impulse buy territory, it still undercuts many other portable gamers.

The one left with me packs an Nvidia GTX 1050 graphics chip, an Intel Core i7 processor and 8GB of RAM. Not only that, it sports looks that will work for gamers as well as coffee shop surfers.

Acer Nitro 5 design

The black and red looks already tip a wink to its gaming potential. However, everything is much more subtle than the Predator range.

The lid is finished in brushed metal, and the hinges are treated to a



good-looking shade of dark red.

The gamer red continues to the keyboard and trackpad too.

The Nitro is also lighter than the Predator we had in not so long ago. This laptop tips the scales at 2.7kg and its 27mm thick from top to bottom.

You get 2 USB 2.0 and a headphone port on the right.

Whilst, over on the left, is a USB 3.0 and a USB 3.1 Type-C port. There is also HDMI and Ethernet, along with a card reader.

A couple of small panels on the base can be used to access the hard disk and memory slots. Unfortunately, if you wanted to upgrade the SSD (solid state drive), that's a more involved task.

It is a good looking lappy. It's light enough to be taken everywhere too, which is something that the Predator and other full gamers have to compromise on.

Acer Nitro 5 performance

The model I have been allowed to live with for a while is the 515-51-771SG, to give it its full title.

This is loaded with the Intel Core i7 which has four Hyper-Threaded cores and a 2.8GHz speed. It's very nice.

Mated to this is 8GB of DDR4 RAM. Also nice.

Images are pushed through the Nvidia

GeForce GTX 1050 mobile core that's buddied with 4GB of dedicated memory.

Rounding things up is a 128GB SSD boot drive and 1TB of Serial ATA storage.

As you can see, this ain't too shabby for what was handed to me as a "casual gamer".

Acer Nitro 5 gaming laptop

Keyboard and trackpad

The Nitro 5 has a decent keyboard for its primary purpose.

The tile style keys have quite a soft finish and medium travel. This means that rattling off reviews, emails and social updates are comfortable, even over long periods.

However, those that are more familiar with a mechanical board on your PC might find the Nitro's slightly dissatisfying. Again, this is supposed to be more of a casual gamer and work tool, rather than an out-and-out fragging machine.

The good news here though is that the keys are very quiet. This not only means no glares from people sat in a quiet cafe but, also, you don't have to leave the living room when you suddenly get the urge to kill zombies while your other half watches *Naked Attraction*.

Lights

The Nitro 5 keyboard is backlit in red, continuing the theme.



The WASD keys are further highlighted in red around the edges. These do not feel to be reinforced in any way, however.

If you tend to use the cursor buttons in-game then be warned. The ones here are quite narrow.

Also, the Enter button, at first glance looks like the full deal. Then you realise that it shares space with the Hash key. The same goes for the left-shift button that bunks up with the left-slash key.

Just things to be aware of in case you accidentally hit the wrong key mid-game.

Trackpad

Again, the trackpad is in that tricky halfway house. For a business or student user, all is great. It is responsive and the in-built buttons are soft.

It has the same overall feel as the rest of the board. At least most gamers will utilise a mouse so the friendly trackpad won't cause them much grief.

Display

The Nitro 5 boasts a 1080p 15.6-inch IPS panel.

That is impressive for a range in this price bracket.

However, don't be expecting G-Sync to be linked with the Nvidia graphics.

As I trundled along in the rickshaw, I thought it was the strong sunlight (ah, the memories) that were washing out the colours, but the same can be said when indoors.

The colours and contrast aren't hideous, far from it. It is just that



Acer Nitro 5 gaming laptop

they're not as vivid as I would expect from an IPS panel.

Once more, using the Nitro for work-based tasks and for socials, the screen is plenty good enough. Additionally, thanks to what Acer calls ComfyView, working on that presentation til the small hours won't wreck your eyes that much.

It is just when gaming or trying to edit photos, you might notice a lack of warmth, especially in skin tones. This didn't affect my taking out terrorists, zombies or cars, but more something I need to report on. It is my duty, after all.

Gaming

Casual or not, it wouldn't be right if I didn't put the Nitro 5 through a bit of gaming action.

The Nvidia GTX 1050 will happily play most Triple-A games at high or even very high graphics settings on the Nitro's 1080p screen.

:GO ran really well without any noticeable lag. Mouse response was translated to the screen accurately and I didn't find much issue with the keyboard. I just prefer a more mechanical feel.

Doom is much more taxing and, in order to keep things sprinting along, I had to dial down a couple of things. Still an enjoyably fluid experience, mind.

Keeping cool

I was impressed by at how quiet and cool the Nitro 5 stayed, even when gaming.

Furthermore, this goes for the internals as well as the exterior.

Battery life

The Acer Nitro 5's 4-cell Li-Polymer battery is a 3220 mAh number. The spec sheet says that this has legs for a maximum of 7 hours.



From my experience, during mixed use including gaming, I was averaging around 4 hours. Decent stamina and this is obviously an area where Acer went for keeping the weight down rather than giving it a hefty battery.

Speakers

After hearing the Predator I was expecting something along those lines. This was not to be.

The Nitro 5's audio output is fairly standard laptop fair. Bass is quite light and the mids slightly flat. However, if you're using the quiet keys to sneak in some gaming, you'll most likely be wearing headphones anyhow.

Acer Nitro 5 review conclusion

The Acer has enough pace to handle games, Office work and most other general tasks you choose to throw at it.

If you are looking for a wholly performance package, then there is room for improvement.

That said, the graphics card and RAM really help things along. The Nitro 5 remained composed through gaming sessions.

It is also nice to work on. I happily caught up on emails and drafted reviews on the Nitro. Sometimes the serious gaming machines can feel a bit cumbersome when tackling

more mundane tasks.

And that's where the Nitro 5 has its strength. If you approach it as a good-looking, general purpose laptop with gaming skills, then this little Acer is an Ace.

Acer Nitro 5 price and availability

You can buy the Nitro 5 right now. Prices start at £849.99 for a model fitted with a Core i5 2.50 GHz chip, 8GB RAM, 1TB storage and a GeForce GTX 1050.

The model with the same spec as reviewed comes in at £999.99. If you want the one packing 1050 Ti graphics, that will cost you £1099.99.

Suunto Spartan Trainer smartwatch

I first heard about Suunto when they released their Ambit. More recently they let me know about their Spartan Trainer Wrist HR. I just had to take a look.

The Suunto Spartan Trainer is a smartwatch designed for a wide range of sports. So, whether you run, swim, cycle, ski or all the above, the Spartan Trainer will suit.

Even triathletes are catered for!

Let's run in to this review – well, perhaps a steady jog. I can't risk

such a shock to my system

Suunto Spartan Trainer design

The Spartan Trainer isn't as chunky as I was expecting it to be. It's not wafer-thin, but also not oversized. This can sometimes be the case with my skinny wrists.

The Trainer Wrist HR measures in at 14.9mm thick and weighs 66g. You also have a selection of models to choose from. There's the gold and steel, which feature metal bezels while the blue, black and ocean coloured versions feature Polyamide (plastic) bezels. As you can see, it's the black version I was sent to review.

The range all shares the same 218 x 218 resolution display. Around that display are five function buttons, two on one side, and three on the other. This is not a touchscreen

watch, but that kind of makes sense.

The watch is waterproof to 50 metres so decent for most swimmers.

At the back of the watch you'll find the sensors, including the



highly rated optical heart rate monitor supplied by Valencell and used in the Sport Wrist HR.

Suunto Spartan Trainer performance

This watch is not short on specific sports modes. It is also sporting GPS so that you can track your routes or simply find your way back home.

In fact, it can store up to 20 different Sports Modes customised from the Suunto Movescount website. Each sports profile can be further customised by adding a 'Custom' mode. This enables you to set up which specific training metrics are displayed and how much data is shown on each training page.

Watch use

As I said earlier, not being touchscreen might appear a bit old-hat but, to me, it makes sense.

The Spartan Trainer has modes for swimmers and skiers, while those might not appear linked, they are. Kind of. Wet digits don't always play well with touchscreens, and the same can be said of gloved

hands. Having the function buttons means that it works for everyone.

Flicking through the menus is intuitive and responsive. The watch offers some choices of face design, but without the flexibility of Android Wear or Apple Watch

OS. Thankfully, what is on offer does look good and rather classy.

The display is clear but, when in direct sunlight, sometimes is not bright enough.

I just happened to be on the English south coast at the weekend where everywhere appeared to be holding triathlons. No, I was not in the slightest bit tempted. However, it did strike me just how many people do this kind of thing. For. Fun!

This makes the Spartan Trainer's Triathlon Mode not only handy for those sports people, but surely fairly unique amongst sports watches.

Update

Being gadgety, the first thing I checked out was if the software was up-to-date. It wasn't.

Suunto Spartan Trainer smartwatch

The good thing was that it prompted me to download the Suunto sync software as well as Movescount.

Both pieces of software worked faultlessly and were simple to use.

Whilst I had the watch plugged in to my computer via the charging and sync cable, I discovered that you could sort out the notifications and more.

Having texts, emails, Whatsapp messages appear on the Spartan Trainer's screen was more useful than I have given credit being. I am actually warming to perhaps buying a smartwatch because of this.

Step counter

Not being particularly sporty, I didn't really get out and push the various sports modes. I did, however, wear the watch for the week I had it to review.

My lifestyle of being basically stuck behind a desk and computer was about to be publically shamed. However, I was surprised to see that, on occasions, I actually do cover some ground.

I feel that I must add that on Saturday I was at a function and so was wearing one of my vintage Rados instead of the smartwatch. The Spartan Trainer didn't really fit the theme of 1920s-1940s styled outfits.

GPS

I really liked having the GPS functionality on a piece of wristwear. I believe that the module is under the hard bump below the watch bezel and forms part of the strap.

You can create routes on the Movescount software as well as using the Spartan Trainer to plot where you have been.

You are also able to save points of interest (POI) as well as tag them – Base camp, home, hotel, etc.

I used this for the more pedestrian functionality of being able to find my way back to the car when I parked in an unfamiliar city.

As you can see in the picture above, you are given the current time, and distance away from the saved POI. The big blue arrow is really clear, as is the target sights.

Sleep tracking

I might not be much of a sportsman but I can sleep. In fact, I am Olympic standard, when given chance.

Although, the Spartan Trainer wasn't impressed by my average 5ish hours per night of not very restful kip over the testing period. Still, this function is still a handy one to have.

Battery Life

I have been impressed by the battery life of the Spartan Trainer. In normal watch/step counter use it will see most people easily through a week.

However, hammer something a little more strenuous, such as GPS, and you'll see that stamina drop to around 10 hours.

Naturally, most people looking to invest in such as smartwatch will be using the mapping, monitoring and analytics more than I. I still reckon that battery life is pretty darned good.

Suunto Spartan Trainer review conclusion

I have been impressed by the feature set of the Suunto Spartan Trainer Wrist HR.



Not only is it a good looking watch, it appears to offer everything that fitness freaks will be looking for. There is enough modes to cover anyone's specialty. This watch doesn't simply have a swimming mode, oh no. You can actually select open water or pool. There are similar specialties when you drill down in the the running or skiing modes.

Furthermore, the heart rate monitor and GPS both proved to be very accurate.

The Suunto Spartan Trainer Wrist HR is brilliant and offers excellent value for money.

Suunto Spartan Trainer price and availability

You can buy the Suunto Spartan Trainer Wrist HR right now from £219 direct from Suunto.

LightwaveRF On/Off smart plug kit

Walking in to your home and telling it to turn on the lights. How cool is that? LightwaveRF has a number of easy-to-fit options to make it possible. I've been playing with the smart plugs.

Automated homes, or smart homes, are becoming less a futuristic thing day-by-day. I have tried a variety of app-connected plugs but their main sticking point is that they don't integrate with anything else.

This is becoming more of an annoyance. For instance, because I have four different brands of IP camera in my home, I have to have four different apps.

If only there was a way of drawing your IoT together. That also works by voice command...

Thankfully Alexa is here (other voice-controlled smart assistants are available).

LightwaveRF is a smart-home solution that offers not only lighting but devices for controlling your heating and power.

Its products can be remotely controlled via a mobile app, PC, re-

mote control or even via Alexa or similar.

As I am in rented accommodation I daren't start installing smart dimmer switches or plug points so I opted for the smart plug pack.

LightwaveRF design

What I have here in front of me is the LightwaveRF On/Off Socket Kit and the LightwaveRF hub.

The On/Off kit comprises of three smart plugs and a little remote control.

These plugs are quite slender, which is a far cry from the first smart plug I got a few years ago.

They each have a small blue button on their side. This switches the plug on and off and, with a long press, enables syncing with the hub.

The LightwaveRF Link hub is also quite slender. It is an attractive bit of kit. It has a status light that runs around its midrift.

On top is a sync button whilst, around the rear, is the Ethernet and power ports.

The hub measures 101 x 30 x 101mm and weighs 218g. This makes it extremely easy to place.

LightwaveRF performance

The kit looks modern and uncomplicated, but looks can be deceiving. Hopefully, not in this instance.

Set up

First thing's first, and that was plugging in the Link hub in to my Sense router and getting power to it.

I ensured that the hub had a clear line of sight. I am grateful that this thing is only small and isn't ugly.

App

Once that was done I downloaded the LightwaveRF app on to my phone.

I registered to the app and then proceeded to follow the simple instructions. I set up all three and had a reading lamp and two other lights plugged in to them.

The app allows you to control the On/Off plugs individually. The great thing is that you can turn them all of at once. Unfortunately, you can't switch them all on in the same way.

Pairing

To pair the switches to the link you simultaneously press and hold the on and off buttons until the LEDs alternately flash blue and amber. Within the app you can then give that light switch an appropriate name.

Once configured, the app is very straightforward to use. The main screen shows the rooms hooked up to Lightwave, and you tap on any of these to select them.

You are then given the option to turn off all lights, or below this to turn the light switch on or off. If you have the dimmer version of the plug or a dimmer switch in-



LightwaveRF On/Off smart plug kit

stalled, a slider bar allows you to dim the lights as required.

Events

Other tabs in the mobile app allow you to set up Events – presets for when you are home or away that can be applied at the tab of a button when required.

The next tab lets you set timers. You'll also find a tab for controlling your heating if you have the necessary equipment installed.

Naming

You can name the various plugs to indicate what they're powering.

If you intend to use Alexa to switch things on and off, it is best to name your devices with words that can be spoken clearly and not misunderstood.

Alexa

Alexa has become part of my daily ritual each morning. She lets me know if there's some significant anniversary or occasion linked to the day, keeps me updated with the news and tells me just how messed up public transport is.

LightwaveRF can also be linked to her. Simply download the Amazon Alexa Skill and you are good to go.

Ask Alexa to "...Switch on..." and that plug will turn on. "Alexa, turn off..." and off it goes.

I found that "Alexa, switch on" works better than "Alexa, turn on". This has worked without hitch since renaming my devices. Initially Alexa was looking for a video player and all kinds of other things.

Remote

The little remote is powered by a watch-type battery.

It simply has four rows of numbered buttons. Each row you sync to the device you want it to control. The buttons are on and off.

If you think that control for four devices is limited well, there's also a four-way switch marked a-d.

This means that you can assign each bank to a device type, e.g. Lights. Alternatively, 'a' could be for the living-room, 'b' the kitchen, etc.

Web app

Just in case there wasn't enough ways to control your home tech, Lightwave also has a web app.

This uses the same login details as the mobile app. First you are presented with a list of rooms.

After selecting your room, you can then control the devices.

I like the clear layout that is similar to the mobile app. This is a handy option if you have eyesight issues or simply would like another option.

Control

These smart switches are really great. on your plug sockets that allow you to turn on and off power when required. You might want to turn on the coffee maker 10 minutes before you get home, for example, or turn off power to the TV between certain times when you want the kids in bed.

They enable you to turn power on and off remotely when required. You can even set timers so that your coffee maker switches on 10 minutes before you get home. You could even set them to switch the kid's telly off at a certain time.

Going away? Set the timers to switch on different appliances and lights throughout the day to give



the appearance of people still being in your home.

Looking further in to things, I reckon I could get the system working with IFTTT. I just ran out of time to play with that before I wanted to post this review.

LightwaveRF review conclusion

This is a great system. Even though I have only got the On/Off kit I have a feeling that this will be expanding very soon. I will check with my landlady if it's OK for me to add dimmer light switches and mains outlets.

Once you have the LightwaveRF Link hub, you can simply add options when you want, or can afford to.

Not only does LightwaveRF work, it looks good doing it.

LightwaveRF price and availability

The Lightwave Link is available from Lightwave for £89.99. Once you've bought this hub device you can hook up any other Lightwave devices you require.

The On/Off kit with remote is £46.99. This comes with three smart plugs.