

HIFICRITIC

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USB CABLES COMPARED

We discover some quite obvious differences between some fifteen types of USB cables

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Dan D'Agostino's striking new stereo Momentum amplifier

BEAUTIFUL BODNAR?

A high value, high sensitivity single-driver speaker from Poland

A FINE IDEA

This compact floorstander provides a new entry level to Avalon's range

ULTIMATE VINYL?

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DAB MYTHS

Under the shadow of an FM switch-off, the DAB steamroller lurches on

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NEAT IOTA

USB CABLES FROM AUDIOQUEST,
CARDAS, CHORD, FURUTECH,
KIMBER, QED, SUPRA and WIREWORLD





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As a journalist interested in news stories, I guess I should be grateful for the whole DAB saga and the threats of FM radio switch off, as the topic has kept me in stories since at least 1998, and still shows no sign of reaching any sort of conclusion. Some idea of the political chicanery surrounding the whole mess is found in Robert Sinden's feature starting on page 11, but the implications for us, as the PB consumers, are equally exasperating.

A decade or so back I bought myself an FM-only Magnum Dynalab tuner. I half expected it would become redundant within five or so years, as the DAB steamroller was well under way, but part of me couldn't really believe that any government would be stupid or vainglorious enough to switch off the FM network. Ten years on I can look back with a degree of smug satisfaction, that the purchase has been thoroughly worthwhile, and could well continue giving fine service for another decade.

I love radio, but only ever really listen regularly to the BBC's Radios 3 and 4. DAB does occasionally come in handy for excursions into 5 Live, but the various TV platforms and the internet cover the same ground these days, and actually do a rather better job.

DAB was always on a losing streak, because it got locked in to a very early form of digital compression, with no way of changing to keep up with the march of progress, which as anyone who uses a computer these days will know has been rapid and inexorable.

At the same time, FM radio still has a great deal on its side from so many points of view, it seems quite ridiculous to contemplate switching it off. And although I don't have the stats to prove it, I reckon far more FM than DAB radios are actually currently being made in one form or another. I daresay that very few actual hi-fi FM tuners are sold these days, but nearly all cars and mobile phones come complete with built-in FM tuners. And of course there's a vast population of existing tuners, table radios, clock radios and so on that continue to work perfectly well, many years after they were originally made.

Indeed, sitting beside my bed is a Hacker *Sovereign* that must be at least fifty years old, yet it still provides excellent service and rather impressive sound quality, and is used nearly every day. The crucial factor that those who decided we all wanted digital radio overlooked was that, unlike TV sets, cassette decks, CD players and (especially) computers, old radios simply don't die or even become obsolescent. They have no moving parts and simply carry on more or less forever. Let's just hope that they're allowed to.

Paul Messenger

Editor

Classic Revivalist

DESIGNER STEVE PHILLIPS DELIBERATELY IGNORES MODERN LOUDSPEAKER FASHION TRENDS IN THE INTERESTS OF ACOUSTIC PERFORMANCE. HIS SP1 SIGNATURE PUTS A MODERN SPIN ON CONCEPTS THAT WERE FIRMLY ESTABLISHED BACK IN THE '60s AND '70s



SP Acoustics will be unfamiliar to most readers, as will its eponymous proprietor Steve Phillips, though that should not be considered any sort of handicap. Phillips has 25 years experience throughout the professional and domestic hi-fi industries, including configuring large PA systems for live music concerts, and developing hi-fi speaker systems for domestic use. He currently splits his time between running his own SP Acoustics operation, and working for and with Kurt Mueller, the component supplier responsible for making the cones, spiders and so on used by all specialist loudspeaker companies.

That useful combination means SP speakers have access to the very latest driver technology, though you might not suspect it from the *SP1 Signature's* visual appearance. It's effectively the company's sole model, albeit available in several versions, and one might well describe it as looking 'traditional', 'classic', or even 'old-fashioned', but that is actually quite deliberate, as the design flies almost self-consciously in the face of modern fashion trends.

Indeed, arguably the only concession to today's fads is that Phillips' £11,940/pair *SP1* is a floorstander, as its overall shape is decidedly reminiscent of the Spendor *BC3s* I used back in the mid-1970s, albeit extended down to the floor rather than sitting on a low stand (with castors!). The most radical feature, however, is maybe that the twin bass units used here operate within a large (100litre) and entirely sealed enclosure. The midrange driver is also loaded by a separate sealed 20litre enclosure.

Sealed-box loading is neither novel nor unknown, but it is decidedly rare in an era where the reflex-ported approach has become all but universal (give or take the occasional and not unrelated transmission line). The classic sealed-box (also known as an 'infinite baffle') first came to prominence with Villchur and Kloss' Acoustic Research company, founded in the early 1950s, and in particular the 1958 *AR-3* design. Essentially it blocks the unwanted out-of-phase rear radiation from the bass driver from interacting and interfering with the wanted radiation from the front of the diaphragm. A secondary but significant factor is that the air within the box acts as a spring, and the driver characteristics are then matched to the acoustic loading.

Although sealed-box loading has certain advantages over other methods of bass loading, notably a more even phase response (a consequence of the more gentle roll-off), by not using the rearward radiation it may sacrifice some efficiency compared to port-loaded speakers, which is probably why it has fallen out of favour. However, when properly executed, its clean, boom-free and well timed character can be very persuasive. Furthermore, because a sealed-box design has a relatively dry and gentle bass roll-off, it's likely to benefit from close-to-wall siting, which is particularly convenient with a speaker as large as this.

This speaker might be large and unfashionably wide, but its enclosure is beautifully finished throughout. Our samples had a top quality black high gloss lacquer finish on five faces, plus a book-matched walnut veneered front with heavily post-formed vertical edges. However, virtually any desired finish is available on request, and it's even feasible to substitute the front panel to match a change in room décor at some stage in the future.

The main enclosure carcass is built from 18mm MDF, while the front panel is 15mm thick. Extensive internal bracing has been applied, over and beyond the internal division between the sub-enclosures, and 7mm ceramic plates are fitted to the inside of panels with a lossy adhesive to add a measure of damping. Substantial chrome-finished billets are fitted underneath front and rear, and while these make no attempt to extend an already generous footprint, they do provide secure fixing for either the three or four spike option supplied.

Bass is delivered from a pair of 165mm (6.5in) drive units with 130mm diameter paper cones operating in parallel, a combination of equivalent cone area to a single 210mm unit. The similar 100mm midrange driver has a 75mm paper cone, while the tweeter here uses a 19mm soft dome. All the drivers are top quality units sourced from Danish OEM specialist Scan-Speak, based on the top quality cast-frame *Illuminator* series, and the various paper cones all incorporate Scan-Speak's 'curved split' technique to avoid standing waves forming within the cones.

The crossover network is fed from a single terminal pair, and uses relatively gentle second-

order slopes. The high quality drive units enable a fairly wide midrange bandwidth, with nominal crossover points at 400Hz and 5kHz. Just four inductors and four capacitors are required, and these are mounted on an MDF board and are hard-wired using silver-loaded solder and copper busbars. Top quality components include air-cored inductors and Clarity Cap capacitors.

It might fly in the face of modern fashion, but the *SP1 Signature* ticks every possible audiophile box. It also delivers an impressive far-field in-room frequency response – it's not entirely flat, but it's certainly unusually smooth, and is also significantly more flexible than most with regard to practical siting considerations. The latter feature is perhaps its greatest strength, and is largely down to the sealed box mode of operation.

All practical listening rooms have low frequency standing waves related to their dimensions. In my 4.3x2.6x5.5m room, these generate significant peaks at around 50Hz and 28Hz, and I've simply lost count of the speakers that have come my way where the tuning of a reflex port coincides with that major reinforcing 50Hz room mode. Given that a reflex port also tends to be a fairly narrow band resonance, the result is all too often – some might say predictably – mid-bass excess, often alongside some lack of lowest octave (20-40Hz) scale and weight.

The simpler sealed-box approach has just the one resonance, between the driver and the box volume, and although in the *SP1*'s case this is bang on 50Hz, output is not too excessive here, while the relatively gentle sub-resonance roll-off ensures decent output down to (and below) 20Hz under in-room conditions. Experimenting with siting indicated that the *SP1*'s balance is a little too dry when the speakers are well out from the wall, but also a little too heavy with its backs close to the wall. In true Goldilocks style, a mid point, leaving a gap of around 30cm behind the speakers, looked likely to give the best results.

Whatever the bass alignment chosen through positioning, the balance elsewhere is basically smooth and neutral but shows a slightly prominent broad upper midband, 700Hz-3kHz, followed by a small crossover dip at 5kHz, and a flat but mildly restrained top end.

Sensitivity measures around 89dB under our far-field regime, a solid and slightly above average figure, though somewhat lower than the 91dB claimed. However, it's accompanied by a demanding impedance which rarely rises above 6ohms, and dips to around 3.3ohms at 100Hz, and again at and above 8kHz.

Sound Quality

This speaker is a genuine monitor, in a world where such a term is often grossly misused. While it doesn't exactly transcend the long established stereotype of the classic large three-way, it executes this solution to the very highest standards, delivering a wide bandwidth with exceptional smoothness and neutrality, a very wide dynamic range and notably low coloration. Exceptional power handling is free from any compression, though the upper mid emphasis can reveal a slightly aggressive character when exploring the limits here.

It's not perfect, as compromise is involved in every loudspeaker design, but the *SP1* is also a very difficult speaker to criticise. One might note that the *SP1* doesn't excel in any particular respect, but that is also a strength, as it tends to emphasise this speaker's neutrality and consistency.

This speaker shows an impressive ability to 'disappear', acoustically speaking, leaving just the stereo music signal spread out precisely between the speakers. Even when driven hard with heavy bass material (Massive Attack and Mari Boine come to mind), virtually no vibration can be felt through the enclosure back, sides or top. Lateral images are precise and well focused, while ample depth is also audible on material where such information is recorded.

The simplicity of the sealed-box loading and the wide dynamic range supplies impressively clean and informative bass reproduction, which not only delves deep into the lowest registers, but also delivers fine timing and good discrimination between different instruments. Midrange coloration is also vanishingly low, with no trace of boxiness or nasality, while the top end simply gets on with its job, filling in the fine detail without ever drawing attention to itself.

Conclusions

Despite some very real differences, the *SP1*'s obvious monitoring capabilities are indeed reminiscent of the Spendor *BC3*. While it might not have the 'direct coupled' dynamic tension, expression and overall coherence of a single driver system like the Bodnar, its effortlessness and consistency across a very wide bandwidth and dynamic range provide ample compensation. It clearly deserves recommendation, although the price is undoubtedly high.

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HIFICRITIC
 RECOMMENDED

DATA

Make	SP Acoustics
Model	SP1 Signature
Type	four-driver three-way, sealed-box loading
Crossover points	400Hz, 5kHz
Drive units	
Bass	2x165mm
Midrange	1x100mm
Treble	1x19mm
Sensitivity	89dB (measured*)
Frequency Responses	
	20Hz-20kHz ±5dB*
	80Hz-15kHz ±3dB*
Bass Extension	-6dB @ <20Hz*
Impedance	6ohms average; 3.3ohms minimum
Pair match	excellent
Size	14x42x18in; 35x106x46cm
Weight	45kg
Price (pair)	£11,940

*Measured under far-field averaged in-room conditions

Subjective Sounds

PAUL MESSENGER

HIFICRITIC

AUDIO AND MUSIC JOURNAL

BECAUSE HIFICRITIC IS FUNDED BY ITS READERS THE SUBSCRIPTION COST IS NECESSARILY HIGHER THAN FOR MAGAZINES SUBSIDISED BY ADVERTISING REVENUE, THOUGH CERTAINLY NOT AS HIGH AS PROFESSIONAL SPECIALIST JOURNALS.

Our budget is directed towards obtaining the very best research and writing from the very best freelance authors, whom we encourage to express themselves fully in print, an opportunity not always available via established publishing regimes.

Through the use of a virtual office, we aim to be exceptionally cost effective. Subscription management, production, printing, editorial, design, laboratory measurement and journalism are scattered around the world, yet are also efficiently and almost instantaneously linked at the touch of an e-mail send button.

Our independence from product advertising allows us to criticise and comment without fear or favour. The HIFICRITIC team scrutinises interesting and internationally important issues and equipment in depth and detail, technically and subjectively, and provides comprehensive investigations into the key issues facing high quality stereo music recording and reproduction today.

Martin Colloms, Publisher

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My limited experiences with room treatment techniques have hitherto been rather disappointing. I do use some melamine foam panels between a couple of beams on the ceiling, and across a large bow window behind my main listening zone, in order to minimise midband coloration and improve stereo imaging, but more dramatic attempts to modify the behaviour of the room have not been too successful thus far.

The whole issue of room treatment is controversial. Some reckon that less is more, and that one shouldn't remove any energy from the system. Others point to the fact that recording and broadcast studios use all manner of treatments to cope with the idiosyncrasies of their rooms.

Irrespective of one's views, there's no denying that the room has a significant role in the sound of a system, and my personal scepticism was well and truly tested when a friendly Dane named Ole Lund Christensen dropped off some of his large Mumax (musicus maximus!) *AMA2* panels for me to try. At £999 for two Air Motion Absorber panels they're not exactly cheap, but then neither are high quality hi-fi cables these days.

The panels are by no means universally applicable, but they do seem effective at countering the effects of unwanted room modes. They're not unattractive to look at, but because they're 195cm tall and 66cm wide (effectively doubling the latter, as they're normally sold as freestanding hinged pairs) they're unavoidably intrusive, especially as they're intended to be sited well clear of a wall – a key disadvantage, especially as the speakers themselves must naturally be still further out into the room.

It's all to do with interfering with the velocity components of the sound energy, and as I understand it the panels need to be well out from a wall in order to affect the low frequency sound waves. Furthermore, the materials used have been carefully selected: one crucial element is a special paint that reduces the absorption at mid and high frequencies, so that the panels operate evenly right across the frequency band.

Although there's no denying their intrusiveness, these panels do really work, quite dramatically so in fact. To assess them I first brought in a pair of Spendor *BCI*s, a free space design with a magical midband but a known mid-bass excess. To my surprise, putting two (or three) *AMM2*s behind the speakers totally changed both the balance and the stereo imaging of the speakers. In this case it wasn't necessarily an improvement, but that's not relevant: what's much more significant is that the change was far more dramatic than, for example, changing cables or support furniture.

The previous and significant 50Hz peak was reduced by a hefty 5dB, which is clearly a good thing, though the somewhat smaller 100Hz peak was increased by around 4dB. In effect, the room mode interaction of the speakers was changed considerably (though it's difficult to say whether this represented a net improvement on the *BCI*'s already good behaviour). Although not susceptible to measurement analysis, the change in imaging was no less dramatic, as the addition of the panels considerably enhanced soundstage precision and instrumental focus. Broadly similar effects were also found using a pair of Nightingale dipole speakers, which certainly seemed improved by the panels.

There's clearly scope for much more work on these Mumax panels, as I want to investigate different speakers and *AMA2* positioning. Pro tem I'll merely say that they do work, and are one of the most interesting hi-fi 'components' I've come across recently. Check out www.actem.de for more info (assuming Christensen gets around to updating his website soon).