



JBL Synthesis SDA-4600 & JBL LSR-708i

If you're a hi-fi buff, you probably won't recognise the equipment featured on these pages. However, if you're into professional audio, you'll probably have come across JBL's SDA-4600 four-channel amplifier/processor, and the JBL LSR708i loudspeakers.

Admittedly, this combination isn't typically employed in a home audio environment. But it's also true that professional gear isn't without its merits from a home audio perspective, and that the lines between the two categories are sometimes more blurred than we realise.

Aesthetically, the pro gear identity of these units is emphasised by finishes best described as rugged, durable

and functional. They're devoid of the sculpted sleekness and refined execution we typically associate with specialist and high-end audio equipment.

That said, there is something reassuring about the plain, anodised black finish of the SDA-4600, and the robust, painted surface of the LSR708i. They exude a certain industrial chic that isn't without aesthetic merit – although I'm not sure my wife would agree!

The professional status of these components is further confirmed by connectors that are a far cry from the gold-plated RCAs and gleaming binding posts that hi-fi enthusiasts are accustomed to. Instead you get terminal blocks and pin connectors.

The SDA-4600's casework reflects a form-follows-function approach: the all-metal enclosure is designed for rack mounting, and as such also makes provision for ample cooling via fascia-mounted front and rear panel vents, boosted by a rear-located, quiet-running fan that only activates when required.

The fascia features a power on/standby LED that glows green in standby mode and blue when fully operational. It also includes vertical rows of level-indicator LEDs for each of the four channels, progressing from green to red, to provide a visual indication of signal level and possible clipping.

At the rear, a row of small, rotary attenuators – one for each channel –





allows individual input level adjustment in 21 increments up to 0 dB. These are in addition to the software-based level adjustments, and are usually set to maximum, but do allow a quick manual override should unexpected clipping occur. Power is via a conventional IEC AC socket.

The terminal blocks and pin connectors are joined by a battery of RJ-45 connectors: one for Ethernet network connectivity and a pair for JBL's proprietary BluLink digital signal transfer system, which can accommodate up to 128 channels of uncompressed, high-res digital audio.

BluLink means the SDA-4600 can operate as a fully digital amplifier solution in complex systems with up to 60 individual amplifiers all centrally controlled. However, as reviewed here, the application is analogue, with analogue input signals via the fully balanced inputs accepted from a conventional pre-amp.

The JBL 708SRLi loudspeakers provided together with the SDA-4600 for this review are equally utilitarian in execution. Their black, bluff finish has been designed to be scuff and stain resistant, rather than cosmetically attractive. The speakers aren't ugly per se – just functional.

Visually, they certainly look more like professional sound reinforcement monitors, with the front-firing port, and the horn-shaped waveguide reinforcing that impression. The driver complement comprises a 25 mm high-frequency compression driver, and a 200 mm mid/bass unit.

The 2409H high-frequency transducer uses a low-mass annular diaphragm to maintain a smooth response beyond

VITAL STATS

JBL Synthesis SDA4600

Power output	4x 600 watts (8 ohms)
Frequency response	20 Hz – 20 kHz (8 ohms, ±0,25 dB)
Signal-to-noise ratio	>108 dB (A-weighted)
Inputs	Balanced three-pin block, 1 per channel Auxiliary three-pin block connector
Outputs	Two-pin terminal strip, up to 10 AWG compatible
Attenuation	21-detent potentiometer, Mute to 0 dB range
Network connectivity	RJ-45 Ethernet
Dimensions (WxHxD)	475 x 87,5 x 356 mm
Weight	<13 kg

JBL LSR708i Master Reference Monitor

Enclosure type	Bass reflex, front-ported
Drive units	2409H 25 mm annular compression tweeter with waveguide 728G 203 mm high-excursion mid/bass driver
Bi-wiring	Yes
Maximum SPL	114 dB SPL/1 metre
Frequency response	45 Hz – 23 kHz (-1,5 dB)
Dimensions (HxWxD)	438 x 248 x 292 mm
Weight	11,5 kg each

Price

JBL Synthesis SDA-4600	US\$4 499
JBL LDS-708i	US\$1 499 (each)

Verdict

A real ability to make the music sound visceral and alive. Allows a close and cohesive match between the hardware and room acoustics. Exceptional configurability – but the tech never gets in the way of enjoying the music!

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OUR RATING: 82 / 100





40 kHz, while achieving high output levels and ultra-low distortion. It operates in conjunction with a so-called Image Control waveguide first seen on the M2 Master Reference monitor.

The waveguide ensures a seamless frequency transition without tonal colouring, and a natural off-axis response that benefits overall accuracy and consistency, while benefiting imaging, detail retrieval and inter-channel coherence.

The mid/bass driver features a high-excursion cone that delivers a consistently high output with minimal power compression, while reaching down into 30 Hz territory.

The 708i doesn't come equipped with binding posts, just terminal blocks compatible with speaker cable up to 12 AWG. The enclosures are manufactured from sturdy, multilayer birch plywood for inertness and resonance resistance, and feel solid and well damped.

Mounting is versatile: the speakers can be mounted on stands or hung from walls, with JBL offering several different mounting hardware options in this regard. In the home environment, and utilised in a stereo role as tested here, they would be best placed on spiked stands.

While the SDA-4600 is a four-channel amplifier, the review system was run in stereo, with the speakers bi-amped – one channel each for the horn tweeter and

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mid/bass driver respectively.

So far so good. But there is a lot more to this JBL Synthesis system than meets the eye. Specifically, the SDA-4600 is not just a power amp: it also offers sophisticated equalisation and digital sound processing, accessed and controlled using software such as the Audio Architect system control software.

The Audio Architect system is network based and offers precise control over every aspect of the amplifier's performance, including detailed and very specific parametric equalisation, filtering and speaker-specific equalisation.

For instance, it already contains a calibration and equalisation file for the LRS708i speakers, which allows a level of linear accuracy and optimised performance usually only achievable after many hours of listening and experimentation. Here, it's a couple of mouse clicks away!

Thus, the SDA-4600 not only does duty as a muscular four-channel amplifier, but offers optimised performance using speaker-specific settings. Even better, the equalisation settings can be further fine-tuned to address room-specific anomalies, or to suit personal preference.

This allows a level of customisation that conventional audio, even at the high-end level, can't match. Admittedly, the process isn't for novices, and certainly

requires some knowledge of acoustics and equalisation techniques. But then, chances are a qualified installer would be doing the set-up anyway.

I'm no engineer, but after some expert tuition from Jacques Kruger and Eugene Oosthuizen of HFX Systems, I was able to find my way around the basics of the Audio Architect software, and it wouldn't take too long to acquire a rudimentary knowledge – enough to experiment.

The Synthesis power amp was combined with our regular Primare PRE32/MM30 pre-amp, utilising its balanced outputs, and relying on the pre-amp for level control. The SDA-4600's own level controls were set to maximum.

The LSR-708is were positioned on spiked, damped metal stands and, after some experimentation, were placed in a free-standing position, but quite close to the side walls. They seemed unfazed by wall proximity, and not particularly fussy as far as room location was concerned, but I kept them well away from corners nonetheless, and toed in just off-axis from the listening position.

From the outset, I was struck by the very lively, vital, visceral sound. There was an excitement and an energy to the way the music was presented that quickly became addictive.

The sound was quick and very agile, delivered with real thrust and purpose. But not just that – somehow there was a sense of presence that I have rarely experienced in the conventional home audio context.

I suspect that part of the reason for this was a broader than expected tonal balance – in both the high-frequency and low-frequency domains. There was a fullness, a completeness to the delivery that injected the sound with a 'live' realism.

The bass, especially, was powerful and tactile, with a heft and presence that sounded and felt persuasive, while adding a solid and stable foundation to the music. As a result, the speakers always sounded much bigger, more generous, more present than one would expect from a set of compact two-ways.

Software

Nils Lofgren – Acoustic Live (Analog Productions SACD)
Branford Marsalis – Trio Jeepy (Columbia 44/16 WAV)
Leonard Cohen – You Want It Darker (Columbia 96/24 FLAC)
John Mayer – Paradise Valley (Columbia 44/16 WAV)

Associated Equipment

Primare PRE32/MM30 pre-amp
Parasound Halo A21 power amplifier
Bryston BDA-3 D/A converter
Marantz SA-KI Pearl Lite SACD player
Synology DS-216se NAS
Olive One network streamer/renderer
KEF R500 loudspeakers





Nils Lofgren's marvellously ambient *Acoustic Live* was delivered with an immersive intensity that captured the vibrant, lively atmosphere of the occasion. The sound was rich in detail, faithfully reflecting the full impact and sparkle of the acoustic guitars on 'Some Must Dream'.

The instruments were portrayed with a sense of authenticity, but the soundscape was also rendered with plenty of breathing space, so that each instrument was allowed to come to its own right. The sound was rendered with a seamless precision that created a truly, three-dimensional picture.

To my ears the trebles were on the bright side, albeit not aggressive, but could be easily toned down through some judicious (read subtle) tweaking of the software-based equalisation.

Moving on to John Mayer's adept and yet underrated *Paradise Valley*, the JBL Synthesis system delivered a lucid, engaging and thoroughly appealing sound that made it easy to be drawn right into the heart of the music.

'Waitin' On The Day' was rendered with an ease and delicacy that allowed the hues and textures of the supple

guitars, the easy rhythm and the laid-back vocals to come to their fullest right. Indeed it was easy to fall under the spell of the music.

For all its easy flow, the performance was never allowed to regress into lethargy, but always retained its punch and sparkle, thanks to the agility and incisive pace of the amp. Again, there was a gleam to the upper trebles, but it never became brittle or confrontational.

On 'Travelling Light' (from *You Want It Darker*), Cohen's weary, gravelly vocals sound eerily present, with the chorus creating an ironically light-hearted counterpoint. The violin becomes a thing of sonic beauty, with the recording closely tracking its texture and timbre, while the bandurai balances delicacy with fluid intent.

It's a personal song closely captured, and the JBL Synthesis system managed to extract the full extent of the music's melancholy with sensitivity and flair, while doing full justice to the honesty and intimacy of the performance.

For something completely different, I went back to an old classic: Branford Marsalis's utterly compelling *Trio Jeepy*, which flings a sassy, adventurous

saxophone at the lithe and muscular bass of Milt Hinton and the adept, acrobatic percussion of drummer Jeff Watts.

It's a bright, joyous and sometimes irreverent set, captured in all its vibrant intensity – and the JBL system really rose to the occasion here. The instruments sounded vivid and vital, solidly rendered on an airy, open soundstage that allowed full access to every nuance, but never lost sight of the close rapport between the trio's members.

Set up correctly, the JBL Synthesis SDA-4600 and its LSR-708i monitors can make the kind of music that will bring out the goosebumps and get feet tapping. The system has a way to hit the spot in terms of that special verve, urge and intensity so typical of live, in-the-room music.

It's a talent rarely heard, and while there are systems that resolve better, are more agile and more detailed, reach down lower and sound more expansive, this combo has a musical magic that, once experienced, is difficult to forget.

You should try it sometime ...

Deon Schoeman