



# The sound of real cinema?

Looking for a speaker system with Hollywood heritage? JBL Synthesis wants to help. **Mark Craven** treats his ears to a 9.4.6 array in a dedicated room where even the amplifiers have brains...

Launched in 2021, JBL Synthesis's SCL-1 is its new flagship home cinema speaker

**THE AMERICAN AUDIO** marque JBL has a storied history when it comes to cinema sound. Founder James Bullough Lansing, then with his Lansing Manufacturing Company, answered the call from studio MGM in the 1930s when it sought loudspeakers of better quality to do justice to its slate of new 'talkies'. Working with Douglas Shearer, head of MGM's sound department, he developed the two-way Shearer-Lansing speaker. This largescale wooden cabinet, also known as the Shearer Horn, handled a frequency range of 40Hz to 10kHz (a vast improvement on the 100Hz-5kHz Western Electric speakers used in many theatres) via a combination of compression driver and 15in bass units. The rest is Hollywood history.

The company, now based in Northridge, California, maintains a leading presence in commercial cinemas, with its latest figures claiming around 40 per cent of UK theatres feature its loudspeakers, rising to 70 per cent of those in the US. Yet alongside its professional business, the JBL name has become well known in domestic audio, from affordable headphones and soundbars, through to high-end loudspeakers and AV electronics under its Synthesis brand. The appeal of the latter is obvious if you think the idea of home cinema is to replicate the multiplex experience in your own room.

## Turnkey solution

For the last 11 years, JBL Synthesis has been distributed in the UK by Karma AV. The Yorkshire-based outfit handles the importation, installation and calibration of cinema setups that can easily reach in excess of £100,000. Not that you need to necessarily spend that much – the Synthesis range features nine loudspeakers and three subwoofers, with prices dipping down to £1,200 for the smallest SCL-8 in-ceiling model.

These can be all be purchased individually, and partnered with any AV receiver, or amp/processor combi, of your choosing. Yet JBL Synthesis wants to provide a 'complete turnkey' solution, meaning amplification, processing and calibration, of a speaker setup that meets your room's requirements (or your addiction to trouser-flapping bass). To this end, the company has recently overhauled not just its loudspeaker and subwoofer lines, but also its electronics, leveraging some technologies from stablemate brand Arcam, plus 'immersive audio' specialist Trinnov, to upgrade the Synthesis proposition to the state-of-the-art.

It was to check out this new platform that brought me to Karma AV's demo room. I'd been here in the past, around a decade ago when it had a 7.4 system installed. A large space, measuring roughly 10m by 8m, and with seating for ten, it's not the sort of room that can be quickly overhauled to house new hardware – initial planning began during the Covid lockdown of Spring 2020.

The cinema, which reopened for customers in February this year, now runs a 9.4.6 setup (with dual surround pairs) for enveloping Dolby Atmos and DTS:X. All the loudspeakers and electronics are from JBL Synthesis's current range (outgoing models, >

**The price list**

Speakers, amps, subs, processor and more...

**1 x SDP-75**



High-spec processor with Atmos, DTS:X and Auro-3D decoding and JBL-enhanced iteration of Trinnov's Optimiser room EQ platform. 16-channel model. **£26,500**

**3 x SDA-4600**

4 x 600W Class D power amplifier with custom DSP, bridgeable (2 x 1,200W). **£5,000 each**

**2 x SDA-8300**

8 x 300W Class D power amplifier with custom DSP, bridgeable (4 x 600W). **£6,000 each**

**4 x DSI 2.0 MA4-D**

4 x 750W Class D power amplifier with custom DSP, bridgeable (2 x 2600W). **£3,500 each**

**3 x SCL-1**

Two-way in-room loudspeaker with 3in horn-loaded compression driver and 2 x 12in woofers. **£18,000 each**

**6 x SCL-4**

Two-way in-wall loudspeaker with 1in horn-loaded compression driver and 7in woofer. **£3,400 each**

**6 x SCL-5**



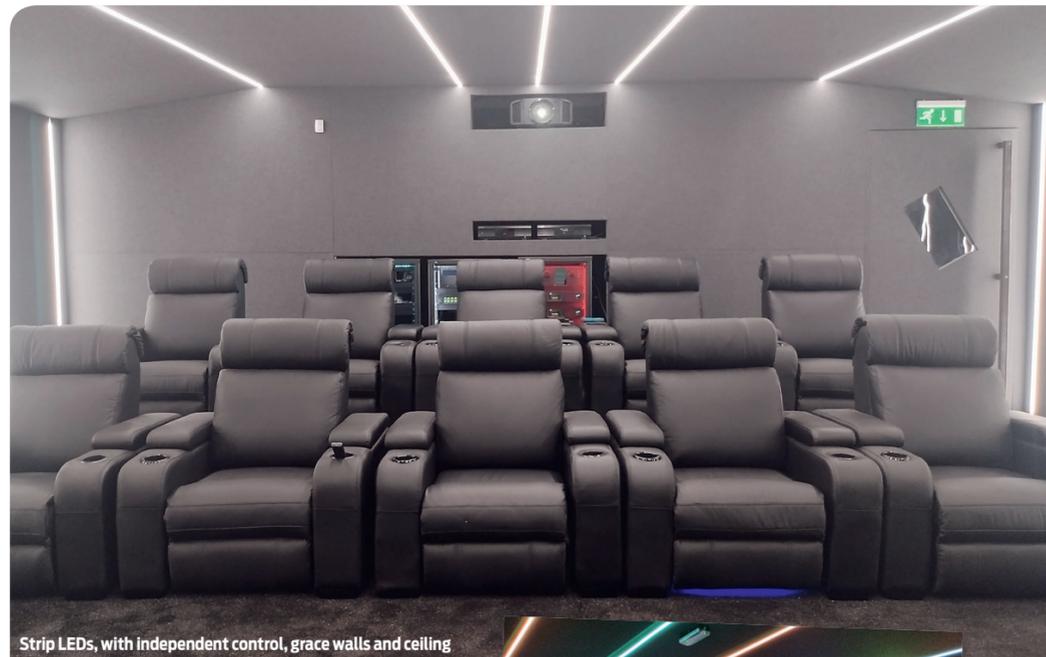
Two-way in-ceiling loudspeaker with 1in horn-loaded compression driver and 7in woofer. **£2,400 each**

**4 x SSW-1**

Dual in-room 15in passive subwoofer, rated at 15Hz-400Hz (-6dB). **£9,000 each**

**Plus...**

JVC DLA-NX9 projector, Oppo UDP-205 4K Blu-ray player; In-akustik balanced XLR cabling, Cinema Build Systems tracking and Camina fabric; 10x recliner seats.



Strip LEDs, with independent control, grace walls and ceiling



including a trio of gigantic 'Everest' cabinets, presumably fetching a decent price on eBay). None of the speakers are on show. But they do make their presence felt.

For the front soundstage, mounted behind an acoustically transparent 5.5m-wide screen (a JVC DLA-NX9 8K eShift projector handles visuals from an Oppo UDP-205 player) are three SCL-1s, the new flagship of the Synthesis range. Priced £18,000 a piece, these feature the company speciality – a horn-loaded compression driver that traces its lineage all the way back to James Bullough Lansing's earlier models – and pair of 12in 'Carbon Cellulose Composite Cone' woofers. Designed for dedicated rooms, the SCL-1 has its binding posts on the front, not the back, with terminals supporting bi-amping and a control to bypass its passive crossover network if used with an onboard device. Each speaker weighs 80kg, partly due to the 1in-thick enclosure design.

A smaller variant of this horn-loaded mid/high driver is found on the SCL-4 in-wall two-way speakers that are used for this cinema's surround pairs and rear speakers, and again on the six SCL-5 in-ceiling speakers. LFE is delivered by four SSW-1 subwoofers, in corner position, each sporting two 15in woofers. Previously, the subs were JBL S1 models, using single 18in cones.

Powering this array is a stack of amplifiers that possibly looks like overkill. There are nine in total: four slim-line DSI MA4-D amps powering the subs; two SDA-8300 eight-channel models splitting power across the surrounds, rears and heights; and three SDA-4600s. These are four-channel amps, but bridged to operate in dual-mono, then used to bi-amp one front speaker each.

What's unusual about the Synthesis system is the amplifiers – as well as the processor – have smarts.

The specific characteristics of the partnering JBL (or Revel – another Harman brand) speaker can be uploaded to its DSP, so just as the SDP-75 processor 'knows' the loudspeaker at the end of each output channel, so do the amps. This makes the calibration process longer, and is one reason why Karma AV prefers to handle it itself.

**If you build it...**

In addition to replacing the entire AV setup, Karma AV has redesigned the room. I wasn't necessarily paying a visit to stroke surfaces and gawp at light shows, but the aesthetics did impress. For a start, all the walls feature stretched fabric, using the tracking platform from Cinema Build Systems. This method allows a stud frame to be built, speakers and cabling to be put in place, and then a fabric – in this case, one from specialist brand Camina – stretched across and attached via CBS's 'walling track'. The result is that everything is hidden, but cable and loudspeaker maintenance remains easy as the fabric is simple to remove (unlike plasterboard). Furthermore, the ostensibly transparent sonic nature of the material means the visible wall surfaces don't create acoustic issues of their own.

Behind the fabric is copious amounts of stud work, with what I was told is 'shed loads' of Rockwool fitted in all the cavities. The original brick walls are covered with acoustic board. Specific treatments are

currently limited to absorption foam at the first reflection points; the room sounds nicely – but not overly – damped.

The lighting system, which was formerly rather prosaic, is now bang on trend. LED strips break up the side walls vertically, and run front-to-back across the ceiling. All are independently controlled (via the Control4 system that also manages the room's hardware integration), allowing for various multicoloured scenes, if that's your thing. The amp rack is also illuminated. A source of irritation are the fire exit lights, one on the ceiling and one above the entrance door – thankfully neither are noticeable from the front-row seating position.

**Distinctive and dramatic**

This is where I sat for a demo. The speakers and subs in this setup are actually smaller than they were before, but, from memory, this new rig sounds dramatically better. Partly that's the extra channels making everything sound more expansive and better steered, but there's also the new room optimisation to factor in, and the improved nature of the loudspeakers themselves.

The JBL Synthesis sound is driven by those horn-loaded compression drivers. The impact these have is distinctive. High-frequency details arrive with force and clarity, so that the performance really is full-range, from deep, deep bass to razor-sharp treble. It's remarkably different to the experience you get with hi-fi-focused loudspeakers, where often the treble response is rolled off to be easy on the ears.

But the thing is, JBL Synthesis's high-frequency delivery doesn't result in listener fatigue. Rather, it's thrillingly lifelike, which brings huge rewards with movie material. Consider the first race sequence in *Ready Player One*, which is littered with sharp sounds, from breaking glass and colliding, scraping metal. Such details should be momentarily wince-inducing, as they would be in the real world – and they are here. The squealing wheels of a train being thrown off its tracks, in particular, was a sound effect that a lesser system would struggle to replicate.

The *Ready Player One* scene has a couple of other notable elements of sound design. One concerns the low-end, which becomes more exciting and outrageous as the race progresses. In the early beats, the Synthesis array and its four subwoofers are tight and punchy, adding heft to truck tires pounding tarmac and a meaty underbody to the engine of Artemis's Akira/TRON mash-up motorbike. Yet then comes the T-Rex throwing its weight around, followed by King Kong. The superstar simian sounded *huge* through the Synthesis system, his footsteps thumping my chest and his breath a multilayered effect blending deep details with a delicate upper edge.

A more subtle sound design trick that was apparent through this 15-channel setup comes right at the end of the scene, when Artemis's bike is grabbed by Kong and then thrown down. Our perspective is facing away from the action, so that the rear and surround channels are in charge, and the feeling of sound approaching you from behind was superb.



The SSW-1 passive subwoofer has a pair of 15in woofers plus 'slipstream' front ports tuned to 18Hz

*Ford vs Ferrari* was an exercise in glorious fidelity. This is one of the more tuneful, well-mixed Atmos soundtracks around, something apparent in the nuanced delivery of dialogue between Matt Damon and Tracy Letts as the former prepares to take the GT40 for a runabout. It was life-like, sonorous and perfectly balanced with the rest of the soundfield. Clarity of treble was again remarkable, shown by the smashing glass of an office door, and the low detail the speakers found in the sounds of the engine and gearbox was accompanied by a feeling of physicality.

The purity of the system's sound with this movie was emphasised when I switched to the gladiatorial fight scene in *Aquaman*. The gloopy, pressurised underwater nature of the sound design was as well conveyed as the wide open spaces of the Ford test track, and the thud of a trident on rock carried the sort of LFE slam you'd expect from a sub-bass system using eight 15in woofers.

As for the upgrade from 7.2 to 9.4.6, the proof was in the system's fantastic steering ability. Checking in on Louie and the gang in their B24 bomber at the start of *Unbroken*, I was greeted by the sound of aircraft engines moving almost insouciantly around the room. And when I headed to the rear wall to swap the disc, the sense of an engine thrumming past me within a three-dimensional space was disconcerting, causing me to glance over my shoulder.

Asked to find a flaw, all I can muster is a slight thinning of the soundstage with front pans, compared to the envelopment the six surround/rear speakers created, with a couple of object-packed Dolby Atmos trailers. The addition of front-wide channels, in a room this big, would likely help, but the presence of a side door means it's not possible at present.

**When a plan comes together**

There's a lot at play in this system: the mechanical nous of the speakers, the obvious power of the amplifiers, the processing and room correction of the SDP-75 (calibration took hours, not minutes), and the acoustic design of the room itself. The whole setup is bespoke to the space, and sounds exactly as you would want from a six-figure setup. That it comes with a dollop of genuine Hollywood DNA is the cherry on top. Pricing, like the performance, is premium. But at least you can save a few quid by not fitting any fire exit lights... ■

Why have one Oppo UDP-205 when you can have two? and (below) cinema seats feature underside illumination



The system rack houses the SDP-75 processor and nine power amplifiers

