

# Monitoring response



**As the number of professional studios dwindled, so did demand for JBL's professional studio monitors. Now the company has thrown its massive R&D resources into winning back that business – from the project studio market**

**Peter Chaikin tells Gary Cooper how JBL has expanded the sweet spot**

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The time was – and not so very long ago – when the standard monitoring kit in almost every British recording studio was supplied by one of two manufacturers: it would be either homegrown Tannoy, or an imported species from those chaps from sunny California, JBL.

Engineers, producers and musicians were often firmly wedded to one or other of the brands, too; in fact it was pretty tribal. But times change and, it has to be said, neither company has even remotely the UK market share it once boasted, though both have hung on in there.

Which makes JBL's bid to win back the studio market fascinating. Clearly, with the enormous resources of Harman behind it, the company doesn't lack for R&D facilities, so what else does it need? Well a fine pair of ears must have been high on Harman's shopping list when it recruited Peter Chaikin as director of recording and broadcasting. With 15 years of independent recording engineering experience, working with dozens of studio stars including Quincy Jones, Patrice Rushen, George Duke, Michael Sembello and Harvey Mason, Mr Chaikin also had product experience with both Alesis and Yamaha. Just the man for the job, in other words.

AES sees the official launch of JBL's bid to regain its crown, the LSR4300 series, which is no doubt named with a respectful tip of the hat to the legendary Rock and Roll 4300s that ruled in the 1970s. Though they were not officially on show, we sneaked a demonstration of the new monitors from Mr Chaikin at PLASA. They're remarkable.

A lot has changed since the days when the LSR4300's near namesake ancestors quite literally shook control rooms. (You don't forget being taken aside by Tony Iommi who proudly confided that the Sabs had started to demolish the rear studio wall at London's Morgan studios using the selfsame 4300s during the mixing of *Sabbath Bloody Sabbath*. Yes, they were that loud.) But even more significant than changes in monitoring fashion, has been the case of the vanishing studio, as one commercial establishment after another has closed its doors. Which means that today's market for monitors lies with project studio owners, who face a unique set of problems.

The most obvious of these (well, the most obvious after working out whether you can afford to build one at all) is that wherever you choose to site a project studio, it is almost certainly going to be an acoustical nightmare, the cost of remedying which, even if domestic arrangements permit, is beyond the reach of all but the very rich. Ok, you can drape a wall here, put up some screens there, but Abbey Road it will never be. Or will it? JBL has come up with an ingenious solution.

The idea comes from the original LSR6300 series and means that LSR4300s come with JBL's RMC Room Mode Correction technology, whereby they measure and then auto-correct for the particular weaknesses of whichever room you are using them in. Supplied with a reference microphone, each monitor (you get a choice of active six-inch, two-way, or eight-inch two-way models) comes with an onboard analyser that measures and compensates for LF problems. And it couldn't be easier to use. All you do is push a button, get ready to jump when a loud tone appears without warning, then watch the result on your computer as the JBLs do all the work.

The LSRs are the first to use Harman's HiQnet network protocol too, which allows the speakers to be controlled remotely from the mix position but, more importantly, means that in surround sound applications, where speaker placement and proximity can be a nightmare in a cramped project room, the system automatically aligns each speaker on the network to compensate for less than ideal placement.

The clincher might be the price which, despite the technological windfall within is (at least in the US) remarkably affordable. The six-inch LSR4326 kit is \$1,399, while its big brother will set you back \$1,699.

Demo over (and the LSRs are very, very impressive, even managing to make the usual plasterboard bass-monster booth at PLASA sound like an environment you could mix in) it seemed only fair to ask Mr Chaikin some tough questions. Starting with what on earth had JBL been doing to lose so much of the studio monitor market in the first place?

'When I was an engineer, JBL was dominant

– the 4311 was on the console tops, JBL was everywhere. What really happened was that JBL turned its attention to other markets. They had technology for cinema, they had technology for tour sound, they had portable PA. So JBL grew those segments and while they were pursuing them they lost focus in recording, or chose not to concentrate on recording.

‘These were more profitable segments and JBL is now very strong in them. At the same time, a lot of good, market driven companies started moving into the recording and broadcast area; simultaneously, the powered monitor phenomenon began, and JBL was not an electronics company per se. JBL had amplifiers but, again, we were off pursuing these other areas and trying to achieve market leadership there. Now that all of those are in real good shape and bring in lots of revenue for the company, JBL says “You know, the name in recording is so strong and JBL components are still very widely in use and still sound wonderful, so how do we get our position back?”.

‘My perspective was there are a lot of good companies, and some very good speakers out there, but we have probably more technology on the Harman campus than any other speaker manufacturer. We make our own transducers, we have our own cabinet manufacturing – it’s a company rich in technology. We have four anechoic chambers, the only known speaker shuffler, which is a hydraulic device that allows us to subjectively compare speakers in the exact same position, so that pairs of speakers are automatically positioned identically in a double-blind evaluation. So, we’re being very scientific and we know we can make a great speaker and we can go out to the market and say we have the best speaker. But I think the job of getting back the market’s attention and moving back to leadership, is going to take more than great speakers.

‘We decided the issue was really not whether we can make a great speaker. We already do that. The issue is what does the engineer or the artist hear at the mix position? If we’re not taking that into account it doesn’t matter how great our speakers are.

‘A lot of work has been done on the JBL campus, making sure a speaker survives in a lot of different rooms. One of the JBL philosophies is that the power response of the speaker has to be excellent; not just the on-axis response but the response that comes to you reflected off the walls, in the reverberant field. What they do at JBL, across all the brands, whether consumer or professional, is measure 360 degrees around the speaker at 72 points in an anechoic chamber and predict what that speaker is going to sound like in the room. This is important because at the mix position, the further away you get, the less of the direct sound you hear, the more of the radiated sound you hear, and if that’s not flat, that’s what you’ll be hearing.

‘So the biggest factor in what you hear is whether the off-axis response is smooth, and many speaker manufacturers don’t pay enough attention to that. They also don’t have the technology to measure it, or the means to correct it. The objective is to make sure that what you send to the walls, the ceiling and the floor comes together at the mix position as a smooth response – not necessarily flat, because if it’s flat, that means your on-axis high frequency may be too bright. You have to find a good blend and if you get that right, then anywhere you walk in the room, you hear the mix.

‘In fact, a good test of a speaker is to listen outside the open door. If you hear full music with high frequency all the way down, then the power response, what the speaker puts into the room, is good. If what you hear from outside are holes, holes in the frequency response, it means that what the speaker is putting into the room is not smooth. We spent a lot of time working on that, so from the mid-range up we can be very, very good in a variety of rooms, varying from very dead to very live.

‘So that’s the speaker, but then there are things in a room that a speaker can’t account for: room modes, resonances, boundary issues. And that’s where it takes a little bit more work.



**We adapted technology from Harman consumer products for the LSR6300 series a few years ago. That used a manual procedure. The next step, for a broader customer base, was to automate that with the 4300 series**

‘There was technology on the Harman campus that they were using on consumer products, which we studied and adapted for our LSR6300 series a few years ago. The LSR6300 system uses a manual set-up procedure, where you measure at the mix position, go behind the speaker and make some compensation and by notching-out the low frequency component that excites the room modes, you eliminate the resonance in the room, and by doing that you get a much clearer picture of bass response. The combination of this power response principle – which in the studio monitors we call LSR (that’s Linear Spatial Reference, which means a linear response in the space you’re working in, not just in an anechoic chamber) – with some eq for room modes and boundaries means we have a pretty good system from top to bottom. And the next step, if we were going to a broader customer base was to automate that, which is what we’re doing with the 4300 series.’

In addition to changes in where music is recorded and mixed, the very nature of the way in which it is recorded has changed. Computers are now essential items in the process for most project studio users and the 4300s cater for users working with computers, just as much as they cater for people trying to record in an attic or garage. In so doing, this confirms Harman Pro group President Mark Terry’s predictions that Harman companies would soon be working together, cross fertilizing technology (in this case the HiQnet) from one to another and making products that easily integrate.

To go back to the glory days (and why not? JBL itself pays tribute in the product name), what happened to the notion of speakers having a character of their own? This was a love/hate thing with earlier generations of monitors, but does Mr Chaikin think have we now outgrown that?

‘The idea is that the speaker should go away. If you’re hearing the speaker and you’re having a lot of fun listening to the speaker, then maybe the speaker isn’t right. Dr Floyd Tool has done a lot of research at JBL that shows that when you play speakers in a double-blind test, the customer will tend to choose the speaker that measures flat. That was a revelation to me, as it meant our job designing a speaker was easier, since we don’t have to do anything other than try to achieve accurate response at the listening position, which, as I say, doesn’t mean on-axis in chamber, it means in the room when you listen.’

It remains to be seen whether JBL can win back the sort of market share it once had in the recording world. The final decision will be made, not by engineers and producers working in commercial studios, as was once the case, but by people in their own studios, using their own ears and their own credit cards. In the end, it’s down to whether project studio owners realize the nature of the problems they have in their chosen environments. Those with a pro background will, others may not and will need educating. Harman is busily working on that with its usual marketing flair, aided by a few of the design elements in the 4300s, let it be said, which seem cunningly designed to attract attention and impress. So are the LSR4300s a new JBL for a new generation of studio? Very possibly. Very possibly indeed. •