

Graham Audio LS5/8 loudspeaker

by Nicholas Ripley

The LS5/8 was one of the last great loudspeaker projects of the BBC Research and Development team, dating back to the late 1970s. It was designed to reflect the increasing need for a large, high-level monitoring speaker for the studio.

This was at a time when 'Auntie' had to drag itself kicking and screaming into the late 20th Century and couldn't just rely on smaller, low-level monitors designed for speech. The Beeb needed loudspeakers that worked with rock as well as classical.

Porting the BBC-derived LS5/8 into the 21st Century is not an easy task, even if polypropylene cones and one-inch dome tweeters are commonplace now. The basic parameters of the loudspeaker drive units are very different today, and the

original LS5/8 was an active design, and a passive crossover was something of an afterthought. To revive this design in 2015's audiophile domain needed some considerable thought. Fortunately Graham Audio is prepared to do that thinking, and designer Derek Hughes was the person entrusted with the task.

There is something of a disconnect here. Derek Hughes is the son of Spencer and Dorothy Hughes, who founded Spondor Audio Systems in the early 1970s, and while Spencer was working for the BBC R&D team prior to that, there is no direct link between the Hughes family and later BBC projects like the LS5/9. Nevertheless, Derek is considered one of the keepers of the BBC flame, and if anyone can rework the LS5/8 into a modern context, it's Derek. ▶





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the near field between the two toed-in loudspeakers. This can make them seem like the biggest headphones in history.

The LS5/8 uses a 34mm Son Audax tweeter, once again protected with a metal grille in the Graham Audio design. It couples this with a custom-designed Volt bass unit, similar to the one found in the LS5/9 (another polypropylene-based design), but this time a 300mm unit.

A crossover is a little more difficult. The loudspeaker was originally powered by a modified Quad 405 (AM8/16 in BBC-speak) and later by a dedicated Chord Electronics amplifier, but wasn't thought of as a passive design. However, passives remain popular with domestic listeners around the world, and a passive crossover was called for. Fortunately, Derek Hughes stepped up to the 4mm binding posts. According to Hughes, “Converting an Active to Passive design is not fundamentally too difficult up to a point. The overall objective is to achieve the same target response.” However, he continued, “one complicating factor is that the variation in driver impedance is not isolated from a passive crossover as it is in an active design, which means that simple filter slopes have unexpected variations to be allowed for, especially around unit resonant frequencies.” The problem is compounded because those late 1970s drive units are not available today, “The tweeter, although basically the same model, had some differences compared to the original, so slightly different slopes and equalisation had to be used. The 300mm driver had rather more differences, although Volt worked well with us to make it as close as possible.”

Graham Audio has retained the BBC's ability to make a big loudspeaker that has no need of a big amplifier. The LS5/8 is the opposite of fussy, acting instead as a great leveller of electronics. The differences between a good amplifier and a great one are reduced here. You can still hear deep into the recordings – never forget this project began as a studio monitor – but the choice of amplifier and source device is not so crucial in the delivery of good sound. Typically, designs like the LS3/5a were made with far above average impedance figures, which means an amplifier seldom gets out of first gear. So, most amplifiers never leave their comfort zone, and those amplifiers with power and quality in reserve, never tap those reserves. Nevertheless, it means the Graham Audio can be used with surprisingly modest electronics, even if roof raising is called for. ▶

▶ The new Graham Audio LS5/8 is a passive, single-wired, front-ported, two-way standmount design, featuring traditional bitumenised thin-wall cabinets and bespoke drive units. That's the easy part. The harder part is conveying the size of the things. The 5/8 always was a big loudspeaker, but with years and years of slimline floorstanders, they look even larger than you might recall. The front baffle is extremely large in the flesh and the physical size of the speaker is somewhat imposing. With an internal volume of 109 litres, it all but dwarfs the 28 litre LS5/9 model from the same company, and towers over the five-litre LS3/5a. Nevertheless, it's not a heavy loudspeaker (thin walled cabinet, remember?), and the Something Solid-like stands are rigid enough to keep the speakers in check. The two speakers, stacked side on side, would fill about three quarters of a doorway, though.

They also need a lot of space, both around them and between them, in order to work at their best. They need at least a metre from the side and rear walls and about three metres from acoustic centre to acoustic centre. Fortunately, they work extremely well firing across a room, with the listener sitting in

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▶ The LS5/8 is unique among big thin-walled standmounts, such as the Spondor SP100R2 and the Harbeth Monitor 40.2, because it's a two-way (the others at this level all feature a midrange cone driver). This has advantages and disadvantages; the integration between treble and bass is usually better handled on a two-way, but a good three way has a more open sounding midrange as a result of having a dedicated driver working in that sector of the frequency response. So it is here; there is a sense of effortless integration across the frequency range, in the manner that only one cone and one dome can provide, but there is a slight hardening at the limits of the bass driver that comes across on massed male voices. Rutter's Requiem [Reference Recordings] highlights this perfectly – the scale and dynamic range required to let a choir breathe and sound like a choir is beautifully retained, but there is a mild 'edge' to those male voices that is like a step between their middle and upper registers. On a lone voice, or on any instrument you weren't intimately familiar with, you would probably not notice this hardening of the vocal cords, but with many singers, it's noticeable. If anything, this mild hardening is pronounced because of the absence of flaws through the rest of the speaker's performance envelope.

The LS5/8 is extremely smooth across the midrange and bass, with an effortless dynamic range that only a big, easy-driving bass unit can bring. In the context of a medium-sized listening room, it's as full-range as you'd like to go (those last few notes of a piano's keyboard come at the expense of a larger room, and typically a lot of room treatment). Curiously, the LS5/9 from the Graham Audio stable delivers more bass, despite it being built into a smaller cabinet, but the LS5/8 presents what it has in a more balanced manner: the LS5/9 puts you in the control room, while the LS5/8 puts you in among the musicians.

Perhaps the most noticeable difference between the LS5/8 and its smaller BBC brethren is the big speaker's abilities to raise the roof. These loudspeakers play louder than other BBC designs, not to headbanger levels (although the combination of large loudspeaker with big bass and plenty of dynamic range playing at a reasonable lick is impressive) but with a sense of scale and drama that is viscerally exciting. I think this can all be summed up in the words 'musically authentic'; you get the sense of floorboards creaking beneath

TECHNICAL SPECIFICATIONS

System: Two-way reflex-ported standmount loudspeaker

Driver compliment: Son Audax 34mm tweeter,
300mm Volt polypropylene mid bass

Cabinet: Thin wall construction (critically-damped)
Birch plywood

Frequency response : 40Hz-16kHz +/-3dB

Crossover: 1.8kHz, 19 Precision Elements, HF 18db/oct,
LF 12db/oct

Nominal Impedance : 8 ohms

Sensitivity : 89dB SPL (2.83V, 1m)

Maximum Output : Over 110dB for a pair @ 2m

Finish: Teak or Cherry Wood Veneer

Dimensions (HxWxD): 76x46x40cm

Weight: 34kg

Price: £6,995 per pair (Cherry finish, £7,295 per pair)

Manufactured by: Graham Audio

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a fast-paced kick drum, of rosin flying off a fast moving violin bow, of Jaco Pastorius playing a real fretless Fender bass, and of a singer standing up to a microphone. A lot of other loudspeakers make this sound like a simulation of these events taking place, the Graham Audio LS5/8 makes that seem like the musicians are really there. Slight midrange hiccup aside, this does all you want from a monitor loudspeaker, and yet without the kind of fatigue commonly associated with monitors retasked for home use.

In some respects, BBC-derived loudspeakers are the easiest products to review. If you like the sound of one, you like them all – they just get bigger, capable of going louder, with deeper bass, and more dynamic range. The port changes the parameters, and a 100+ litre ported loudspeaker with a 300mm drive unit is never going to sound quite as fast and as lithe as a five litre sealed box with a 110mm 'bass' driver – but the basic character is retained across the board. And that's what you have here in the Graham Audio LS5/8. It is a loudspeaker that perfectly follows the BBC legacy and heritage. This is a loudspeaker that might have forever been hidden away from public view and the last of the line of BBC speakers could have just been a footnote in audio's history. Graham Audio deserves great credit for bringing these classics to light. +