

# Making Waves

**REL BRITANNIA B2**  
(£1395)

You don't need an AV set-up to enjoy this no-holds barred sub from REL, a stereo system will thank you too



Tested by Ken Kessler

To shun subwoofers because of some imagined association with the Dark Side is to ignore a noble history, and with British and Continental rather than just American precedents. Indeed, while M&K and other pioneers in the States were developing bass augmentation systems for domestic and pro use, UK legend Jim Rogers offered an active sub for his delicious JR149s. So, to set the tone, guys, subwoofers are politically correct in two-channel terms.

The problem has always been one of integration. Which is why REL carved a niche as a subwoofer-only specialist, before the calling came to exploit multi-channel. REL's designs are the rare exception: 'universal subwoofers' in the truest sense. From the outset, REL's subs have offered the most thorough arsenal of settings for integrating their products with the widest range of main speakers, including dipoles, electrostatics and others that exhibit an almost wilful refusal to accept external bass support. Without apology, they are complicated enough to warrant a 32-page instruction manual, the net result being that your labours will produce a sub/main speaker blend with a seam that's impossible to detect.

#### QUICK SET UP

Although the range is mature and virtually above reproach, the brand's biggest market – the USA – demanded something more. And before you start accusing Yanks of an unnatural love for deep bass, assuming that they only listen to Snoop Dogg at 140dB, chew on this for a while: Americans are blessed with larger rooms. REL certainly doesn't dress up its subs, so I'll let the pictures tell the story rather than kvetch about something most people will hide anyway. Build quality is rock solid, and – despite dimensions of 343 x 610 x 410mm (whd) – the B2 is a sod to move around: the massive 10in woofer, audiophile-grade electronics and solid construction contribute to a 38kg total.

REL isn't prissy about positioning: the manual offers a number of degrees of anal-retentiveness, with chapters entitled 'REL Set-Up Made Simple' and 'REL Set-Up Made Simpler'. Because you'll be eager to have the Britannia

#### ANGLO-AMERICAN

According to John Hunter of Sumiko, REL's parent company, the Britannia Series is, despite its name, 'a response to the American market's desire to push REL's performance platform ever higher. I specify "American market" because one of the useful functions Sumiko performs for all its partners is to listen very carefully to the market and then pass along our recommendations... We pushed for a higher performance package, while the rest of the world was sold the current ST range, which emphasises compactness over performance.' Whatever fears of Americanisation this may plant in you, Hunter also stressed that the RELs were designed for two-channel systems as much as anything else.



## AUDIO FILE

Subwoofer with 300W of on-board amplification. Inputs include high and low level, with RCA phono and XLR connectors.

Price: £1495 in wood finishes, £1395 in black.

Made by: REL Acoustics Ltd

Telephone: 01656 768777

Web: [www.rel.net](http://www.rel.net)



ABOVE: Down-firing port is part of REL's ARM (Acoustic Resistive Matrix) system, a technology said to be a cross between reflex-loading and transmission-line loading

up and running, these are the instructions you'll use at first. You can dig into the meatier parts after the unit is run in, and you feel comfortable with the changes it makes to your system.

#### RIPPLING FLOORS

Upon braving the set-up possibilities, you'll find more tweaking fun than anything this side of a linear-tracking tonearm. REL's B-Series subs provide 24 crossover frequencies from 22-96Hz, using precision trimmed circuits, high-level and low-level inputs through a variety of connectors, fine and coarse roll-off – they left no variable untouched. And this subwoofer can be optimised for either two-channel or '.1' roles.

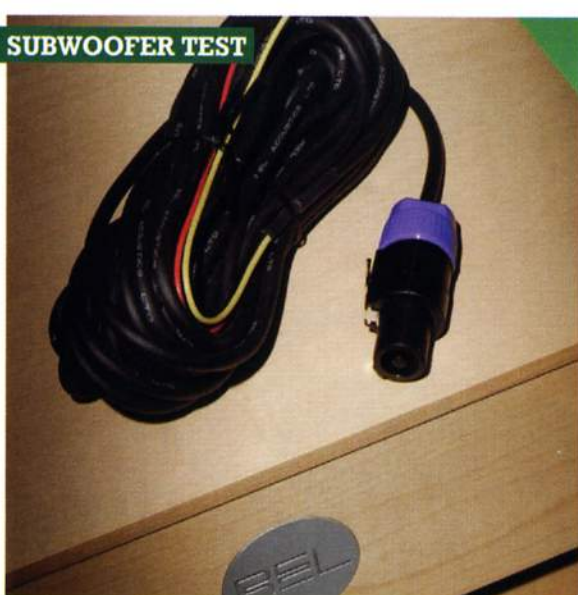
'Weight was subtle, not like getting whacked over the head with Thor's hammer'

Where the REL really shows its stuff is in the way it handles what can only be described as 'sub bass'.

However deep you think your system goes, this extracts that little bit more. As REL's John Hunter put it, the topology 'approximates a transmission line. The merits of REL's approach to true sub-bass has been catalogued by many, so I'll simplify it down to a profound ability to accurately, tunefully play the very lowest registers – the sort of thing where the walls begin to distort and the floor ripples with true infra bass – the area in which this occurs is the sub-35Hz range.

'In the B-Series, a forward-firing driver effects the improved slam and attack, as well as carriage, we were looking for but features a complex rectangular-to-round inner chambering (like a poor man's ARM loading) that ultimately vents to a down-firing port. The result

## SUBWOOFER TEST



ABOVE: The REL B2 is supplied with a Neutrik Speakon-terminated lead for high-level connections

is the synthesis of many previous REL ideas into, we believe, a better whole. We have delivered about 96% of Stentor-like low bass with better upper and middle bass registers, at about 30% less money.'

### WEIGHT – THERE'S MORE

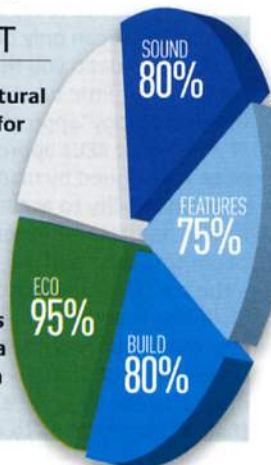
REL set up the sub to augment my Sonus faber Guarneris, crossing over at a low 22Hz – a benefit of having a rock-solid listening room which obviated the need to cross over any higher. With McIntosh valve electronics, Marantz CD12 and an SME analogue front-end, I sat back eager to learn about the area of sound that matters least to me: deep, deep bass.

Now I am not one of those who finds the bass of the original Guarneri even remotely 'light', but it was clear that the addition of a perfectly optimised, robust subwoofer added weight that I didn't know I was missing. It was subtle, though, rather than a case of getting whacked over the head with Thor's hammer. As much as I used it to exploit blockbuster woofer breakers, from ZZ Top to Funkadelic, it was far more impressive to hear what the sub did with acoustic bass on Alison Krauss recordings, kick drums, and – yes – a dose of Kodo. While I'm sure a knob twiddler could turn the B2 into a weapon of musical destruction, REL set this up in my room for sonic purity. And I never felt the B2 was an intrusion. It diminished nothing in the main speakers, while adding precisely the 'lift' REL hoped I would hear.

If you, like so many, can only house smallish speakers, but also have a gap within which a sub could nestle, you must try the B2. But be nice when you visit the retailer. Very nice. And then maybe he'll set it up for you. That 32-page owner's manual is a bugger. ☹

## HI-FI NEWS VERDICT

While one can understand a natural preference among enthusiasts for subs made by the same maker as the main speakers, eg, B&W with B&W, REL has proven over the years that universal subs can work. The B2 was able to mate seamlessly with speakers as diverse as LS3/5As, Guarneris and MartinLogans. If that isn't a rave recommendation, then I'm Gordon Brown.



# REL BRITANNIA B2

## SUBWOOFER / £1395

Hi-fi news  
**LAB**  
RESULTS

The power amplifier is a DC-coupled linear class AB type, rated at 300W

Input connectors include Neutrik Speakon sockets for high-level, and two RCA phono connectors for low-level (0dB and +12dB). A balanced XLR connection is also available

REL's choice of bass driver is a 10in (250mm) paper-coned unit with a 25mm 'throw'

Heavy-duty cast frame chassis, similar to that used in REL's B3 model but of greater weight and able to dissipate more waste heat

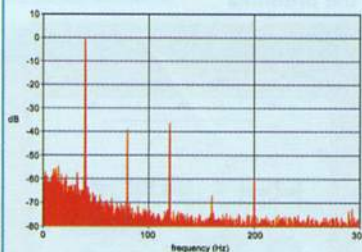
## HI-FI NEWS LAB REPORT

Unlike the last REL subwoofer we tested – the compact R-505 [Aug '06] – the larger B2 is a reflex-loaded design rather than a closed box, albeit elaborated by the incorporation of REL's Acoustic Resistive Matrix loading system. Compared to a closed box design there is much less call on EQ to achieve an extended response, so the B2's integral amplifier is actually less powerful than that of the smaller R-505 – 300W as opposed to 500W.

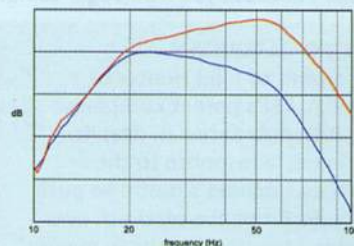
The R-505's response to crossover adjustments was idiosyncratic, and the B2's is too. To read off the frequencies specified on the rear panel you would expect the output to be progressively extended towards higher frequencies as the Coarse and Fine controls are adjusted from A1 to D6 – but that isn't what happens. As the

frequency response plots for these two settings show (blue trace and red trace respectively, 10dB per vertical division, obtained via the line input), the crossover settings act more as a tilt control. The upper corner frequency remains unchanged at about 56Hz, as does the lower corner frequency of about 20Hz.

At an output level equivalent to 72dB SPL free-field at 3m (which equates to 90dB SPL at 3m in-room assuming 18dB boundary reinforcement from two adjacent walls and a floor), driver THD at 30Hz was 1.3%. A light piezoelectric accelerometer attached to the middle of one side panel indicated that the B2's lowest cabinet resonance occurs at 133Hz, which gives its high (sixth-order) rate of roll-off above 60Hz is comfortably above its working range. KH



ABOVE LEFT: Distortion from 40Hz tone, showing 2nd harmonic at 80Hz and higher 3rd harmonic at 120Hz



ABOVE RIGHT: Effect of coarse and fine controls, from A1 to D6 settings

## HI-FI NEWS SPECIFICATIONS

Distortion (72dB SPL at 3m free-field, equivalent to 90dB in-room)	1.3%
Upper corner frequency of cut-off	56Hz
Upper corner frequency of cut-off	20Hz
Filter type (high-pass filter)	4th-order
Filter type (low-pass filter)	6th-order