

# TAKE TWO!

The RELT/9i, flagship of the company's "Theater Reference" production series, shows just how good a compact subwoofer can be, even for music – and things get even better when you use two!

A subwoofer is an active loudspeaker, usually cube-shaped, devoted solely to the bass range. So far, so good and, in the common perception, it's a prerequisite for convincing home theater, where it looks after the '.1' channel in those 5.1- or 7.1-channel systems (or more!). But does its ability to 'bring on the thunder' mean that's all it can do?

Certainly not: you see, it's a fact that the human brain associates deep frequencies with large spaces, not least of all because large, deep-reaching loudspeakers usually sound

more space-filling than small ones. So with a subwoofer a system – yes, even one purely dedicated to music – just sounds deeper, larger and more substantial. Interestingly the effect can often set in before the music starts – you simply perceive the space.

Active subwoofers often offer several options for incorporating them into the sound reproduction chain. So the bass cube can usually be connected via a pre-amp-level cable, which requires that you possess separate pre/power amplifier components, or that one or two special subwoofer or pre-amplifier outputs are present on an integrated amplifier. (It's worth noting here that a "Rec Out" or "Processor" output isn't suitable, as these are fixed level outputs, and always operate at the same level independent of the volume control; what you need are outputs whose levels change in tandem with the main volume setting.)



Special home theater subwoofers can be recognized by the fact that they usually have a single-channel design, designed to be fed by a single consolidated LFE output – that ‘.1’ again. However, many subwoofers can, like speakers, also be connected with speaker wires to the amplifier: due to their high-resistance design, this can easily happen parallel to the existing speakers.

REL mostly recommends this solution, which is also the only one that allows the full-fledged stereo connection of a T/9i – even back in the mists of the company’s history, founder Richard Lord would say that this was the only way to ensure the subwoofer was entirely in phase with the ‘main speakers’ it was underpinning.

That’s how the T/9i is configured: as well as single RCA phono (‘low-level’) inputs either through the built-in crossover or direct, for use with home theater components with their own crossover filtering and LFE output, the subwoofer is equipped with a Neutrik speakON connector for ‘high level’ connection straight from stereo speaker outputs, and is hooked up in a three pole manner on the amplifier side, which means with a joint negative pole for both channels. The manual suggests you

connect the cables on the end of the speakON connector to the amplifier’s left channel positive and negative terminals, and the right positive.

REL is considered a pioneer of subwoofer technology: I personally can remember a sub from this manufacturer nearly as large as a desk, but with the current REL Theater Reference T/9i, we are dealing with a surprisingly compact and therefore living room friendly specimen, which was evidently conceived primarily for home theaters, the “Theater Reference” series name giving it away. An especially long-throw 20cm bass driver with a white FibreAlloy composite membrane in a steel chassis fires forward, while a downward-firing black 25cm passive membrane of identical construction delivers the bass reflex support, but with no danger of port noise. A class AB amplifier with a 300W output sits within the high-gloss black housing, the speaker also being available in white.

For an additional 230 Euro, a wireless connection solution named “Arrow” is available: claiming practically no additional delay, its signal transmitter and



▲ The black, slightly larger passive woofer fires downward to create bass reinforcement and tuning

receiver replaces the wired connection between amplifier and subwoofer. A clever accessory!

### Beating the boundaries

Every boundary surface – floor, wall or ceiling – in close proximity to a subwoofer increases the sound pressure by around 3 dB, which makes life easier for the internal bass amplifier. However, you still have to experiment intensively with the positioning, as this boundary reinforcement can all too easily lead to droning effects more suited to home theater use with its exploding buildings and circling helicopters, than for audiophile requirements, which are more concerned with instruments presented in the finest possible detail.

And here we come to a little criticism in this context: the included power cord is much too short for any of the more unconventional positioning variants, but at least the T/9i uses a conventional IEC mains input, so sourcing a longer power lead shouldn’t be too much of a problem.

Although it weighs barely 19kg and has manageable dimensions, the REL goes powerfully to work, reaching deep down to well below 30 Hz. It delivers support for the space, an essential goal for most audiophiles, just as well as it creates a sonorous, tightly defined and deep black foundation for the music. Low-pitched organ registers in Bach’s Toccata provide breathtaking excitement with a T/9i, and with two in harness – of which more in a moment –, in addition to making the room thunder less, the result is an enormously confident rendering free of effects. The increase in solidity and three-dimensionality also comes to light with live concerts like Nils Lofgren’s “Acoustic Live” or Scorpions Unplugged (in Athens) – even when no low bass is involved at all!



## THE PERFECT SETTING

REL's Theater Reference was, as the name suggests, originally intended for home theater use, which explains the provision of a low-level RCA input for connection to the LFE output of an A/V receiver **1**, which could also be used with the a preamplifier or integrated amplifier having an integrated crossover network and dedicated subwoofer output. Alternatively, for preamps or amplifiers offering an unfiltered preout connection, there's a separate 'low-level' input **2**, signal from which passes through the REL's internal crossover filtering – as does the 'high level' speakON input **3**, which connects to an amplifier's loudspeaker terminals. For a single subwoofer set-up we'd use the high-level input, but if using two units we'd prefer the low level RCA input, with each subwoofer connected to its own stereo channel.

As far as positioning in the room is concerned, it's vital to strike the right balance between sufficient and excessive boundary reinforcement of the bass: to get an idea of the best position, play some music through the sub with your main speakers turned off or disconnected, and with the subwoofer located at your preferred seating

position. Walk around the room, including into the corners and against the walls, and where you hear the best balance between bass power and definition is likely to be good starting point for positioning the subwoofer. Yes, really!

For control set-up, begin with the gain set to medium level **4**, and then check at which phase setting (0/180°) **5** the bass functions most effectively in its desired position, in interaction with the 'main' speakers. For this and all other settings, a second person is helpful, meaning one for the adjustments and another in the listening position. If the lower frequency limit of the loudspeakers is known, cautiously approach this with the crossover control on the subwoofer **6** and set the level just where the subwoofer is no longer conspicuous. Go through this exercise again in different possible installation locations, and choose the one where the integration seems most conclusive. In the coming days you will certainly readjust and optimize,

as most often the first setting is too loud. In the case of a second subwoofer added later, repeat the procedure. The crossover / cutoff frequency will probably remain unchanged, but the level of each subwoofer can be reduced. Unfortunately the REL's level also changes if you vary the crossover frequency (see diagram).



That is incidentally something that most people don't consider in connection with subwoofers. This understated sub also provides clarity, tranquility and suppleness – that strange effect of better bass seemingly improving the sound throughout the entire frequency range.

### Take Two

I mentioned the use of two T9/i subwoofers, and what makes the addition of a second sub interesting is that unavoidable modes contingent upon the dimensions of the space, in other words the resonances, are less excited with this configuration. Use two subwoofers in different positions and you can run both at lower level than were one to be trying to fill the space with a single sub, one reason why two subwoofers are better than one, even two mid-sized ones rather than one large one.



◀ "Arrow" makes the REL (signal) wireless for an additional charge. It works superbly!

The drivers usually respond more quickly and, with less cone movement, can create the same sound pressure as one doing all the work alone, usually meaning distinctly less distortion and audible effortlessness. You actually "hear better with the second one", and right at the top of its range, with the No 25 and "Gibraltar" models, REL would even suggest a stack of several subwoofers to create a sub-bass "line array" – the company catalogue includes G1 Stacking Rails for just this purpose!

REL says that its mission in life is that "We make subwoofers. That's it. Nothing else. No distractions. Nothing to steal our focus," and in the T9/i you can certainly see an absolute specialist is at work. In this price category the British company is operating in the top bracket, and that's literally doubly true when you use two T9/is, which play better and allow more favorable integration than a single larger design for the same or slightly higher price.

Yet this REL it isn't "only" about more bass, but about better, more controlled and faster bass. It's about more space, more music, more enjoyment. And two RELs work so congenially with a room that they should be considered veritable problem solvers. Bass, better, best...

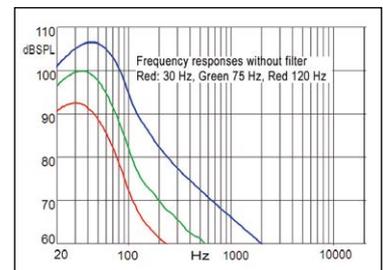
**Tom Frantzen**

**REL T9/i**  
 About € 1,250  
 (Arrow wireless add-on € 230)  
 Measurements: 33x39x41 cm (WxHxD)  
 Warranty: 3 years,  
 Contact: REL Acoustics  
 Tel.: +44 (0) 1656 768777, www.rel.net

REL's compact subwoofer, the flagship of its "Theater Reference" series, plays precisely and forcefully, reaches down to almost 25 Hertz (-3 dB), and is perfectly suited to supplementing compact, or small- to medium-sized floorstanding, speakers. The solution becomes truly superior with two subs – and of course you can always start with one and then add another later. Superb!



### MESSERGEBNISSE



**STEREO-TEST**  
**SOUND QUALITY 73%**  
**PRICE/PERFORMANCE**  
 ★ ★ ★ ★ ☆  
**EXCELLENT**