

## The LeadingEdge Racks and Room Treatment – Adopting a systematic approach to system infrastructure

By Steve Dickinson

**W**e live in complex times. Back in the good old days, you put the hifi into a cabinet, which kept it off the floor and stopped the cat from sleeping on it. If you didn't want a cabinet, you put it on a convenient table. All was well, provided nothing got broken during dusting. Then somebody noticed that, actually, what you stand this stuff on seems to make a difference. This observation has led to a wide variety of solutions, from the Bauhaus, via Heath Robinson, to the Cammell-Laird schools of design.

All have one stated purpose: to allow the equipment to work at its optimum with minimal disruption from unwanted interference. The fun starts when you try to get agreement on what form that interference takes, and how you deal with it. Me? I find it best to subscribe to the 'by their fruits, ye shall know them' school. If it works, be happy. It is, of course, always nice to have an inkling as to what might be going on.

LeadingEdge is a collaborative venture between Vertex AQ, whose isolation platforms and cabling have been reviewed in *Hi-Fi+* on several occasions, and Kaiser Acoustics, whose Kawero loudspeakers have been winning friends and influencing people across Europe for a while now.

Kaiser's expertise is in acoustic technology, and they also have some very



high-class cabinet making facilities, as is clear from the superb fit and finish of the Kawero loudspeakers. Kaiser has been supplying acoustic treatment products to the architectural acoustics market for decades, with impressive installations that embrace everything from concert and conference halls down to lecture theatres and commercial premises. This is serious science and engineering we're talking here, so expertise in the field is well established. What's new is that, in combining its skill sets with Vertex AQ, the two are bringing them to the wider domestic audio market, reaching beyond the loudspeakers into all aspects of the system environment; Kaiser delivers the room treatment and cosmetics, Vertex provides the support and signal isolation technology. Together they should add up to an interesting approach. ▶

## FEATURE / THE LEADING EDGE RACKS AND ROOM TREATMENT

- ▶ The Vertex AQ philosophy is that the principal offenders are vibration and electromagnetic noise. Vibration may be external - mostly created by the system in action; and internal - vibration of transformers and other stuff excited by the AC current, or mechanical movement of transport mechanisms, sub assemblies or components. External, acoustic, vibration



The table itself incorporates several different technologies, intended to control vibration and reduce electromagnetic interference. An electromagnetic absorption layer is built into each platform level, together with various anti-vibration and acoustic control technologies. Much of the cleverness is, though, contained within the platform shelves

themselves, working through the Vertex AQ HiRez equipment support cones which form part of the system. Two cones are top and tailed with a rubber pad and O-ring (Vertex AQ describes these as 'decouplers'), while the third is a mechanical coupler, providing a single exit path for mechanical energy within the unit itself.

Each platform also conceals a complex labyrinth, consisting of numerous different-length paths, intended to dissipate vibrational energy of different frequencies. The platform's top-plate has two metal insert panels which couple, mechanically, to this labyrinth. The equipment is stood with the two decouplers resting on the wooden part of the top plate, and the coupler placed on one or other of the metal inserts, as convenient, so that vibration can pass down into the labyrinth below the surface. This suggests not all unwanted vibration is external, and too much isolation will prevent that vibration being removed effectively in the first place.

The platform also minimises the amount of external vibration that can influence the equipment, this reduction primarily managed by the feet fitted to each shelf. Known as Stop-Chocs, and originally developed in the automotive industry, the mesh blocks are used to reduce noise, vibration and harshness by securely, yet flexibly, attaching heavy components to the vehicle structure without transmitting vibration.

Finally, airborne vibration is dealt with acoustically. The underside of each platform incorporates the micro perforation technology used in the acoustic panels and similar, free-standing, side mini-panels can be placed alongside the equipment. These acoustic panels also contain EMI absorbing materials, to reduce electromagnetic interference. The aim is to sit the equipment in an environment that is as free as possible from external influences.

can be structure-borne, commonly transmitted through vibrational energy in the floor or walls, or air-borne: vibration set off by the movement of air in the room. Electromagnetic noise is mostly external, entering either via the cabling, or through the casework.

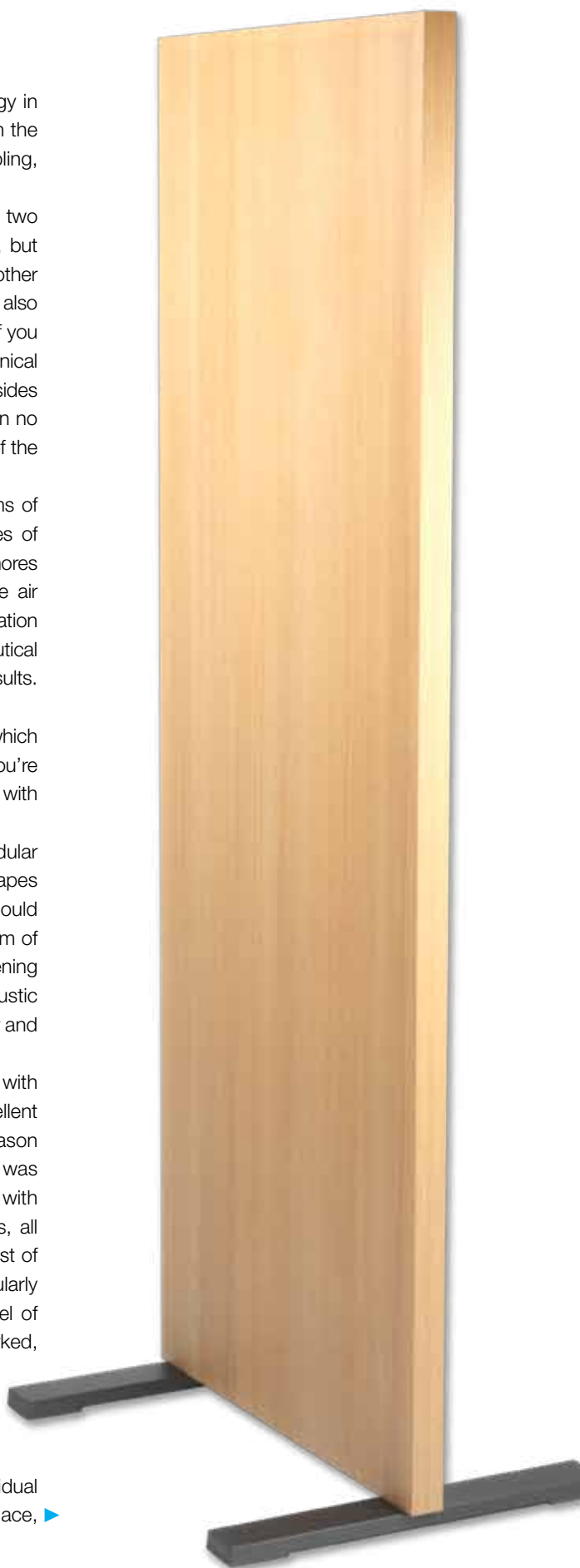
In all these various types of interference, the problem boils down to two issues: how to minimise the degree of interference entering the system, but more importantly, how to get rid of it once it's in there. This is where some other approaches fall down. If you focus on isolating the equipment, you may also prevent any interference that is already in those units finding an exit path; if you focus on grounding, you can make it easier for external, malign, mechanical forces to find a way in. The LeadingEdge racks attempt to cover both sides of this equation, and seemingly do so with considerable success, aided in no small part by the Acoustic Panels that make up the other significant part of the system solution.

The vast majority of acoustic solutions consider the problem in terms of pressure; sound is pressure waves, to be dealt with by varying degrees of absorption or reflection, strategically located about the room. But that ignores the fact that sound also has a velocity component; the particles in the air mass are actually physically in motion. LeadingEdge employ micro-perforation technology, a well-established technique in the architectural and aeronautical worlds, to handle energy peaks in the velocity domain – with astonishing results. But I'm getting ahead of myself...

You may not want to concern yourself with equipment support, in which case coffee-table or cabinet makers will be happy to take your call, but if you're persuaded, as we at Plus Towers are, that this stuff is important, then come with me, dear reader.

Essentially, there are two products in the LeadingEdge portfolio: a modular equipment support table, and a range of acoustic panels in various shapes and sizes. Each works perfectly well by itself, but for full effect they should really be used together, the whole being (considerably) more than the sum of the parts, as I discovered during a very interesting day spent in RG's listening room, working our way up to a full-blown LeadingEdge table and acoustic panel system, while LeadingEdge's Steve Elford explained the technology and the thinking behind each element.

Most people will start with the table, so that's what we did. Beginning with the equipment set up on a rather nice Quadraspire table using the excellent new bamboo shelves, the system sounded tidy and enjoyable. No reason not to like it, certainly no criticisms of the table, at the price. The system was an uncompromisingly high-end one, as befits the Gregory household, with electronics from Wadia, VTL and Jeff Rowland, playing into Kef Blades, all connected and powered by Nordost Odin. Frankly, though, given the cost of this system, at this point I'd not have been thinking it was money particularly well-spent. Moving across to the LeadingEdge table, a whole new level of organisation was immediately apparent. The contrast was quite marked, suddenly the contributions being made by the old table were clearly evident, being now largely absent. As we added the various different elements of the LeadingEdge system, all kinds of music just started making much more sense. Whether dense orchestral such as the Dvorák 9th Symphony, or fast, modern jazz from Roberto Fonseca, the individual musical elements became better sorted, arranged in the right time and place, ▶



- ▶ making more sense of their contribution and portraying levels of musicianship that had, hitherto, been well-concealed.

An example: I took along one of my favourites, the Roberto Fonseca album *Akokan*. We spent some time using the track *Lo Que Me Hace Vivir*, which has a harmonic and rhythmic complexity reminiscent of Bill Evans. Partway into the track, it explodes with a rush of added energy and impact, the intensity of Fonseca's piano matched only by the speed and skill of the percussion. Except that it wasn't. At first, before we moved over to the LeadingEdge rack, the percussion was uncontrolled and almost random, with little or no connection to the music. It was like Animal from the Muppets being let loose, in one of his more manic moments, and the rest of the band doing their best to play the piece and keep up. Bit by bit, however, as we added the various different elements of LeadingEdge technology to the system, the magic began to happen. Suddenly, the percussion fitted into the music, and stopped being an unhelpful intrusion. Rhythmically and dynamically the various musical elements fell into place and it no longer sounded like an under-rehearsed band with an out-of-control drummer, instead becoming an ensemble of superb musicians, unquestionably on top of their game. Now, all the expensive hardware began to justify its asking price.

Dense orchestral music fared just as well. As we built up the various LeadingEdge elements, from racks to acoustic panels, the sense of an orchestra working against itself receded and we were left with a performance free of congestion, confusion, and spatial disarray, replaced with a convincing, stable and, above all, meaningful presentation of the music.

Encouraged by all this, I took away a smaller set, to get to grips with it in the familiar surroundings of my own listening room. Happily, the benefits seem to be remarkably consistent and the LeadingEdge stuff seems to be effective in systems big and small, in rooms palatial or poky. It's capable of scaling up, or down, as the

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situation requires. It's also possible to use the platform shelves by themselves, so entry to the LeadingEdge system doesn't have to start with an entire table setup. Platforms can be free-standing on top of your existing supports or tables, or perhaps most interestingly of all, built into the sort of wall units that can hide entire systems.

Once you've heard the typical sonic contributions made by various different support materials, it is often not difficult to recognise them. Steel and glass supports sound different to wooden ones, and acrylic sounds different again. The striking thing about the LeadingEdge table was the lack of this sonic signature. I'm used to the MusicWorks ReVo table, which takes a rather left-field approach using only acrylic, and one of the things I like about it is that it seems to impose very little of itself. The consequence of that is that if I'm listening to a familiar system on a different table, it's not difficult to hear the table's contribution to the proceedings. Not so the LeadingEdge. The ReVo does this disappearing act, partly, by not really being there all that much, anyway. The LeadingEdge takes a more considered, more complete and ultimately more successful approach, achieving its unobtrusiveness through clever and thoughtful engineering. Unfortunately that cleverness means there are too many considerations to cover in a single review, so I need to leave things here until next issue, where I'll be examining the LeadingEdge range in greater detail. For now, let me just say that these products delivered such a fundamental improvement in system performance, in more than one case and of a nature it would be hard to achieve by other means, that they've forced me to reassess system priorities and relative values. These products are not cheap (although their modular nature does help in that respect) but, if more music means better value, LeadingEdge is a very valuable proposition. +

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