

## Support Systems that Finally Let You Hear the System You Already Own



Ask most people in the audio industry about racks and they'll mutter something about isolating your equipment from mechanical feedback. Not only is this a complete misconception, such simplistic notions can actually do more harm than good. LeadingEdge examined the problem from first principles and established first, that what you are trying to isolate is the signal, and second, that there are five key steps to achieving that goal.

- Vibration energy generated within electronic components must be drained using an impedance-matched exit route rather than being trapped in the chassis by the equipment's feet.
- Vibration energy that is drained away from electronics must be broken down by an efficient, impedance-matched, non-resonant method.
- Equipment supports must be isolated from external sources of vibration.
- The electronic components should be protected from high levels of electro-magnetic interference.
- The electronic components should be protected from high levels of sound pressure energy.

To effectively confront all these problem areas demands a complex and sophisticated solution, but succeed and you'll be amazed by the musical and sonic benefits that result, the performance achieved by your system.

### Dedicated Support Solutions Demand Dedicated Technologies

At the heart of the LeadingEdge racks lies the support platform, an incredibly efficient sink for unwanted acoustic energy. By applying the "two soft, one hard" principle, we lift the equipment off its own feet and provide a single exit route away from the chassis. The stainless steel coupler is always positioned on one of the steel inserts on the top surface of the platform. The steel inserts are linked to the main internal labyrinth. This consists of literally thousands of very efficient acoustic paths, of great complexity and widely varying path lengths, dissipating energy through destructive interference.



To deal with the problem of unwanted external structural vibration, each platform is fitted with a set of four 'stop-choc' isolation feet. These feet are a derivative from products used in the automotive industry and comprise a compliant structure formed by a mesh of very fine stainless steel wire. These are much more effective than rubber or polymer based decoupling compounds – at lower frequencies they absorb energy by tiny movements of the wire against each other, losing the energy to friction, but because they are a complex 3D structure of hard material, they also break down higher frequencies, again through destructive interference.

Unwanted radio transmissions, whether from the system itself, or from external sources such as mobile phones and wi-fi, are harmful to performance. Such signals produce RFI intermodulation, distorting subtle detail, smearing timing cues and raising the noise floor. By employing an EM absorptive compound within the platform construction, we can easily create an absorptive barrier between each of the electronic components in our equipment stack. Absorbing EMI is far better than shielding or screening, which will always reflect or re-radiate some of the energy - particularly at high frequencies.



And finally we examined the problem of high levels of airborne sound 'rattling' the cases of our electronics. If we can reduce sound pressure levels then we reduce the transfer of energy into those cases, and this we can do by employing our micro-perforation/honeycomb technology on the underside of the platforms. The racks are constructed with an open frame, so the micro-perforation panel on the underside of the platform is fully exposed to the airspace directly below it, and so the equipment on the shelf below benefits from a reduced sound pressure level environment.

## Creating a Safe Haven

Once we had created the LeadingEdge platforms, it was then possible to employ them as key building blocks in the creation of a complete, modular support solution. The rack itself is built on a universal base unit fitted with large stop-choc feet, to provide good decoupling from floor vibration. It can be used as a single layer platform/amp stand, or as the first layer of a multi-layer rack. The rectangular open frame construction of the rack sides was deliberately designed to enable the addition of mini-panels, incorporating additional EMI absorption and micro-perforation technology, allowing you to create a "quiet bubble" or cocoon around your system. Oh, and if you need to quieten down the space around the component at the top of your stack, you can use another set of frames but this time with a top cover, a platform without the labyrinth and steel inserts, but which is fitted with the EM absorptive layer and the micro-perforation panel on the underside.

The full LeadingEdge solution, with platforms, rack, and mini-panels, is capable of remarkable performance; or rather, it finally allows you to hear the performance your electronics have always been capable of – and that you've already paid for! The benefits are so significant and fundamental that it's worth working through your system from first principles, simply to understand just how critical proper equipment support really is. You will be pleased and astonished by the results



hi-fi+

“... these products delivered such a fundamental improvement in system performance... they've forced me to reassess system priorities...”

Steve Dickinson, Issue 96



## Modularity and Upgradeability

The racks and platforms are entirely modular to enable easy assembly, positioning and stacking. They simply click together like 'Lego', the whole rack being levelled from the base, while each platform can also be individually levelled too. But, being self-contained, the platforms can also be used on their own, on the shelves of an existing rack or in built-in cabinets. Customers can purchase the platforms first, then upgrade later to the racks and mini-panels. All of the elements of the LeadingEdge support system can be acquired in stages, each offering an upgrade in performance.

## Discreet Design and Beautiful Finishes

Perhaps the most demanding and important design criterion of all was that the finished rack must have all the elegance and quality of the best available modern furniture. That meant internalizing all of the technology and creating a design that combined Bauhaus simplicity with superb standards of fit and finish.

Every element of the LeadingEdge support system is produced in-house by the master craftsmen at our Bavarian factory. And when it comes to the look you want, bespoke finishes can be chosen from literally an infinite choice of paint colours or wood veneers and finished in semi-gloss or deep piano lacquer. With a range of different sizes and heights to choose from, the equipment support system that looks as good as it sounds is finally a reality.

For further information on LeadingEdge Rack and Platform Systems please contact:

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