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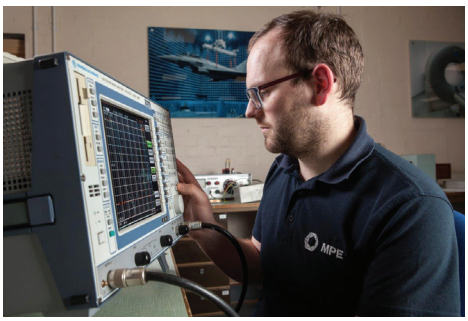
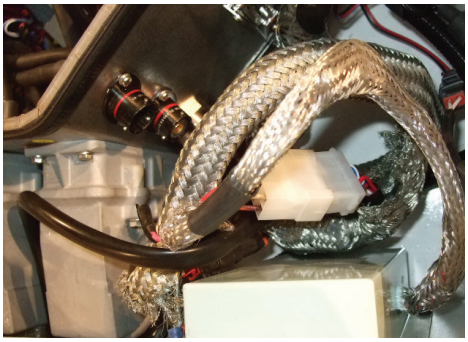


Pre-compliance filter testing and analysis in-house at MPE



A typical configuration often tested – an MPE EMC filter with shielded cables in close proximity to each other, shown here in the power compartment of a defence aerospace application. Mechanically, pre-compliance testing work can also highlight the very tight space constraints that may apply to housing a filter product.

Pre-compliance EMC testing on-site or in-house

MPE provides a sophisticated pre-compliance EMC testing service, which can be either on-site or in-house in MPE's dual-chamber screened room to suit customers' needs where practical. Typical scenarios for applying this capability include military vehicles, test chambers, data centres, radar and communications facilities and control rooms.

Before major compliance costs are incurred, the diagnostic, pre-compliance EMC test service defines the most cost-effective choice of EMI suppression to meet stringent EMC standards such as DEF-STAN 59-411 Land Class A or Class B and MIL-STD 461.

As a longstanding supplier to the UK MOD, NATO and defence forces around the world, MPE holds all relevant defence and international standards approvals and has the experience, expertise and products to protect all types of military equipment and systems from EMI and EMP hazards.

Military specifications for mission-critical applications in defence and aerospace are more stringent and require greater dynamic range and different measurement bandwidths than less exacting commercial standards.

The company's pre-compliance evaluation service includes baseline noise measurements, comparison to specifications, and identification of local areas and causes of non-compliance. Pre-compliance testing allows changes to be made during the design phase based upon real-world test results.

The earlier that product deficiencies are identified during the development process, the easier, less expensive and less time-consuming it is to rectify problems. Rework or even redesign at the point of production usually comes at a high cost.

Sources of radiated or conducted noise can be located, and individual pieces of equipment can be tackled, even down to bench level, to define the most appropriate screening or filtration solution.

For example, all types of military vehicle ultimately need to be tested for such emissions, and particular emphasis is placed on emissions in the HF, VHF and UHF frequency bands where many military radios operate. This electrical noise can be caused by sparking from motor or generator brushes, microprocessors and SMPS circuitry, or it can be produced by secondary radiation from cables and harnesses carrying noisy signals down cables connected to these devices.

On the basis of that pre-compliance testing, MPE's Engineering Department can then develop and supply full prototype filter units for final approval work.

To find out more, you are invited to download a brochure on MPE's pre-compliance EMC testing capability from here.