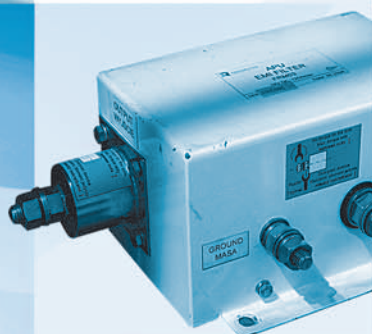
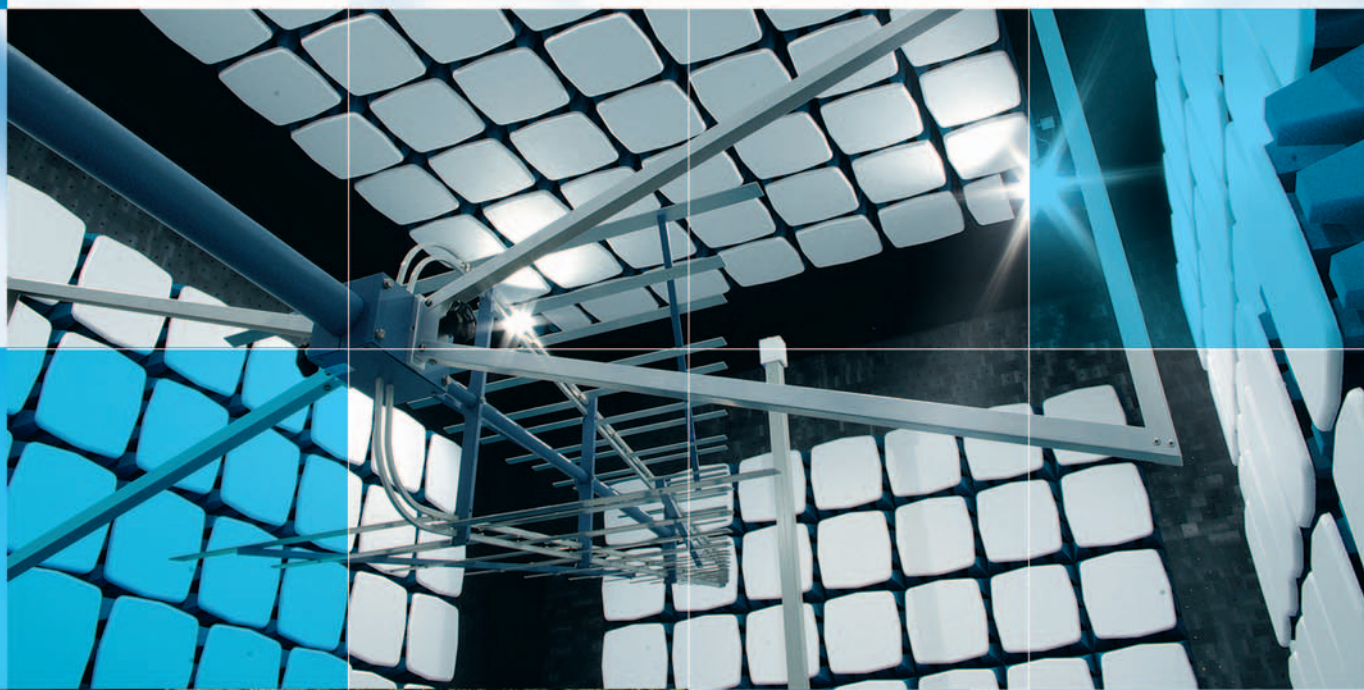


# TAILOR-MADE SOLUTIONS TO EMC PROBLEMS



 **Radiotechnika**  
marketing sp. z o.o.



## ■ EMC – OUR SPECIALITY

One of the key activities of Radiotechnika Marketing is providing **solutions ensuring full electromagnetic compatibility** of electric and electronic devices. We address not only the issues concerning product compliance with the requirements of several international and industrial standards, but also functioning of complex systems integrated into common electromagnetic environment.

Based on our extensive experience in designing devices predestined to meet the hardest demands of electromagnetic compatibility standards, we have been the first in Poland and one of the very few companies worldwide, to introduce a unique service of providing the manufacturers with assistance on design and implementation of electromagnetically compatible products.

## ■ PRODUCT MODIFICATION FOR EMC COMPLIANCE

We have created this innovative service to develop and implement complex solutions providing manufacturers with EMC compliant products, ready to meet the requirements of any standard or regulation. Your products are thoroughly tested in our EMC Laboratory and, once compatibility problem is discovered, a selection of the following remedies is offered:

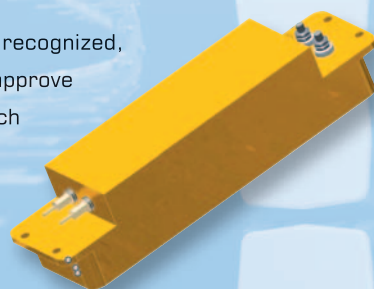
- compliance test report containing proposed modifications to the device,
- development of the solution that brings your product into EMC compliance,
- delivery of the EMI filter prototype,
- commencement of a long-term cooperation on EMC control system and the supply of required EMI products and materials.



the blueprint of proposed modifications, including CAD drawings and 3D models which ensure complete integrity check of the proposed solution with the device in question. Meanwhile roughly modified product is tested in our EMC laboratory. After the customer's final approval is granted, we provide a prototype of designated solution and then the device is fully tested for EMC compliance and environmental immunity.

The first step on the way to product modification for EMC compliance is the analysis of its design. Our R&D engineers are not only well trained and highly experienced in resolving several EMI protection issues, but they are also capable of instantly working out the way the whole system works, its design and electric circuit. This enables them to **immediately identify potential sources of interference.**

Once the EMC problem is recognized, our customers are asked to approve



The EMC solution sometimes can be as simple as adding a small shielding, re-routing the wires or adding an ordinary capacitor. But sometimes a more sophisticated EMI filter or even redesign of the PC board is required. We can propose any of the solutions keeping in mind not only EMC compliance, but also cost and long-term production issues.

## ■ EMC COMPLIANCE SUPPORT AND CONSULTANCY

Involvement in developing changes in design of other companies' products requires close cooperation and constant information flow. Our specialists have been successfully cooperating with many R&D departments of several domestic and international manufacturers. Being involved in the early stages of design process enables us to offer consultancy and support with the selection of EMC oriented components and design solutions. It is a perfect way to reduce cost and time needed to develop EMC compliant product.

## ■ CUSTOMIZED EMI FILTERS

If simple product modification fails to assure appropriate EMI reduction level, it is necessary to implement comprehensive EMI system.

We provide high quality EMI filters suitable for military and civilian applications, such as military vehicles, AC/DC power generators, computer systems or harsh-environment deployable equipment.

We design not only AC and DC filters or signal filters, but we also produce EMI systems, including filters for several different lines. We supply customized filters for particular product and ensure appropriate margin of safety concerning EMC requirements.



Each of our dedicated filters is designed in close cooperation with the manufacturer's R&D department, being thus electrically and mechanically integrated with predestined device or system. All filters are thoroughly tested in our EMC and Environmental Testing Laboratory for compliance of electrical parameters and their

immunity against temperature, humidity and mechanical stress. Unlimited access to our own laboratory helps us reduce cost and time needed to develop final solution.

Ultimate quality of products has always been crucial for us. Our filters are made of most carefully selected, high-end components. We make sure to keep EMC oriented elements in stock at all times. Our EMI suppliers include **Raychem, TE Connectivity, MPE, Corcom, Holland Shielding** and **Instrument Plastics**.

We believe that our customers do repetitive business with us not only because of the quality assurance we provide, but also because they are aware of tangible benefits brought by such close cooperation. We are proud that our EMC approach differs significantly from this offered by our competitors because **we not only test and recognize problems, we eliminate them** by applying practical and effective EMC solutions that best suit your product.

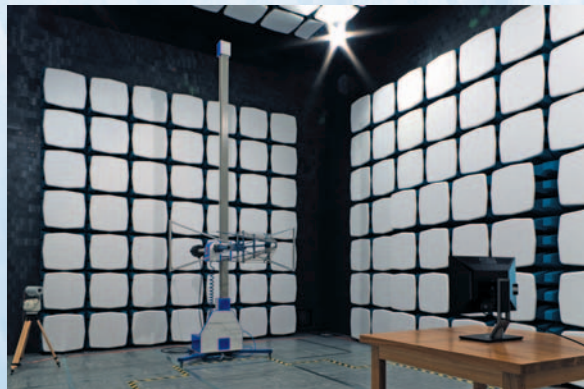




## ■ EMC TESTING

Achievement of the highest possible quality while modifying your products for EMC compliance would never be possible without outstanding technical resources. Our EMC Laboratory has become a crucial link in the process of developing effective EMC solutions.

We carry out standard EMC tests in a cutting edge anechoic chamber with 3 m test range. Our Laboratory has also been equipped with other high-tech devices, allowing testing for both conducted and radiated emissions as well as for susceptibility against electromagnetic field. The application of unique double shielding system enables us to test equipment with extremely high level of electromagnetic field energy. We provide tests for wide range of devices, starting from small electronic apparatus, up to big constructions with max dimensions of 2 x 2 m and weight of 500 kg, including combustion engines at work. We have facilitated our chamber with equipment allowing **testing for military purposes**, in accordance with military standards MIL-STD 461F and Polish NO-06-A200 & A500. We can also run a set of immunity tests against temperature (range from -70 °C to +180 °C), humidity (up to 95%) and mechanical stress (vibrations, single and multiple shocks, user defined shape of pulse).



We have committed ourselves into projects concerning products of different scale. For fixed installations and large size mobile objects that are either too big or impractical to be moved into the anechoic chamber, such as military and combat vehicles, **we are offering on-site EMC testing package**. Our specialist have been thus far arranging and carrying out tests on all sorts of testing grounds, such as OATS, installation sites and other carefully selected locations.

While testing your product, we not only aim at its compliance with EMC requirements, but most of all, we try to

work out the internal dependences between each element of the system. We are convinced that this becomes crucial in case of large and complex systems creating one common electromagnetic environment (EME). Installing number of devices that proved to be EMC compliant within one unit does not guarantee them not to interfere with each other. And this is what we do best – we find complex solutions for most complicated matters.

We are a can-do company looking forward to face and complete most difficult and unusual projects. Solutions we deliver are not only efficient and realized with utmost diligence, but also fully optimized and economically viable. Experienced and highly committed, we provide our customers with solutions to the problems that others consider unresolvable.



### **Radiotechnika Marketing Sp. z o.o.**

ul. Fabryczna 20, Pietrzykowice  
55-080 Kąty Wrocławskie, POLAND  
tel. +4871 327 07 00, fax +4871 327 08 00  
e-mail: [office@radiotechnika.com.pl](mailto:office@radiotechnika.com.pl)  
[www.radiotechnika.com.pl](http://www.radiotechnika.com.pl)

### **BRANCHES:**

01-368 **WARSZAWA**, ul. Rzędzińska 3, tel./fax +4822 631 07 00, tel. +4822 631 07 26  
80-252 **GDAŃSK**, ul. Jaśkowa Dolina 15, tel./fax +4858 342 69 72  
40-085 **KATOWICE**, ul. Mickiewicza 29, tel./fax +4832 209 08 55  
90-254 **ŁÓDŹ**, ul. G. Piramowicza 11/13, tel./fax +4842 630 80 59