

## EMC test laboratory

### Pre-compliance measurement and service



### Description

The complex EMC conformity tests must be carried out by accredited laboratories that have the appropriate measurement equipment and a shielded RF absorber chamber. A test run of a product quickly costs considerable amounts and is associated with many weeks of waiting time, depending on the workload of the laboratory. If a product then fails the test, a rework or design change is necessary, which often becomes time-consuming and expensive at such a late stage of development and can postpone the market launch.

To avoid these problems, we offer to perform EMC pre-compliance tests in our laboratory to address emerging issues at an early stage of development. This ensures that EMC tests with the final product in an accredited laboratory are successful at the first attempt and without expensive retesting/design changes.

Only highly qualified test engineers with many years of experience work in our in-house EMC laboratory. Thanks to short registration deadlines and maximum flexibility in planning and execution, you can smoothly integrate desired tests into your work and development processes.

## Measuring stations

- Mode swirl chamber MSC (following EN 61000-4-21) for radiated immunity and spurious radiation up to 1GHz (shielded)  
Object size max. 1.000x500x500mm, up to approx. 100V/m
- Shielding chamber for various measurements  
Object size max. 1.000x500x500mm
- TEM cell for noise immunity and spurious radiation up to 1GHz  
Test volume max. 300x300x100mm
- ESD measuring station up to 30kV
- Burst measuring station
- Surge measuring station
- Two measuring stations Interference/noise immunity conducted up to 500MHz
- Near-field probe measuring station (for localization of leaks and sensitive areas)
- Measuring station conducted HF, 10 kHz to 230 MHz

A detailed list of the measuring and testing equipment of our EMC laboratory is available on request.

## Customized solutions

We develop your solution when the standard does not lead to the goal. Through an individual analysis of your needs, we offer customized solutions based on our decades of experience and in-depth expertise and guide you through the processes.

- Optimization of circuit designs (EMC design)
- Positioning of components on the pcb
- Proposals for an EMC-compatible layer structure and corresponding conductor track guides
- Shielding and grounding
- Interference suppression and correction of deviations
- Cabling, wiring and optimized filtering
- Individual determination of standards and legal requirements
- Determination of the test setup and possible auxiliary devices

## Legal specifications

**We test your equipment for compliance with the following standards and regulations as part of pre-compliance:**

- European harmonized standards (EN)
- DIN / VDE standards
- Other national and international standards and regulations, e.g. IEC, ISO, CISPR, NAMUR
- Company standards and customer specific requests

According to the following standards, among others:

- EN 61000-6-4 emission (industry)
- EN 61000-6-2 immunity (industry)
- EN 61000-4-4 Burst (only for single-phase devices) up to 4.4kV open circuit
- EN 61000-4-5 Surge (only for single-phase devices) up to 4kV open circuit
- EN 61000-4-2 ESD
- EN 61000-4-3 HF radiated
- EN 61000-4-6 HF conducted
- EN 55016-2-1 (CISPR 16) Surge conducted
- EN 55016-2-3 (CISPR 16) emission
- EN 55011 (CISPR 11) ISM

## Further services (RF technology)

Our particular strength lies in the field of wireless systems and antenna development. Since antennas in modern wireless systems cannot be considered independently from the rest of the system, the interaction (matching and electromagnetic compatibility) with other system components must be taken into account during antenna development.

But it is not only the immediate environment of the antenna (i.e., the system itself) that affects antenna characteristics such as matching, directivity, and gain. The antenna mount, mounting location, enclosure and, in many cases, the user of the system itself can greatly influence the directional characteristics of the antenna. We perform a comprehensive analysis of the entire system (analog and/or digital circuitry) and develop suitable solutions. Often only, small changes to individual components can significantly increase the performance of the overall system.

We thus support you in all development phases, from initial concept considerations, feasibility studies and calculations through the entire development to production preparation and quality assurance.