SEIBERSDORF LABORATORIES

FREQUENTLY ASKED SOLUTIONS

ADVANCED SERVICES FOR MICROELECTRONICS

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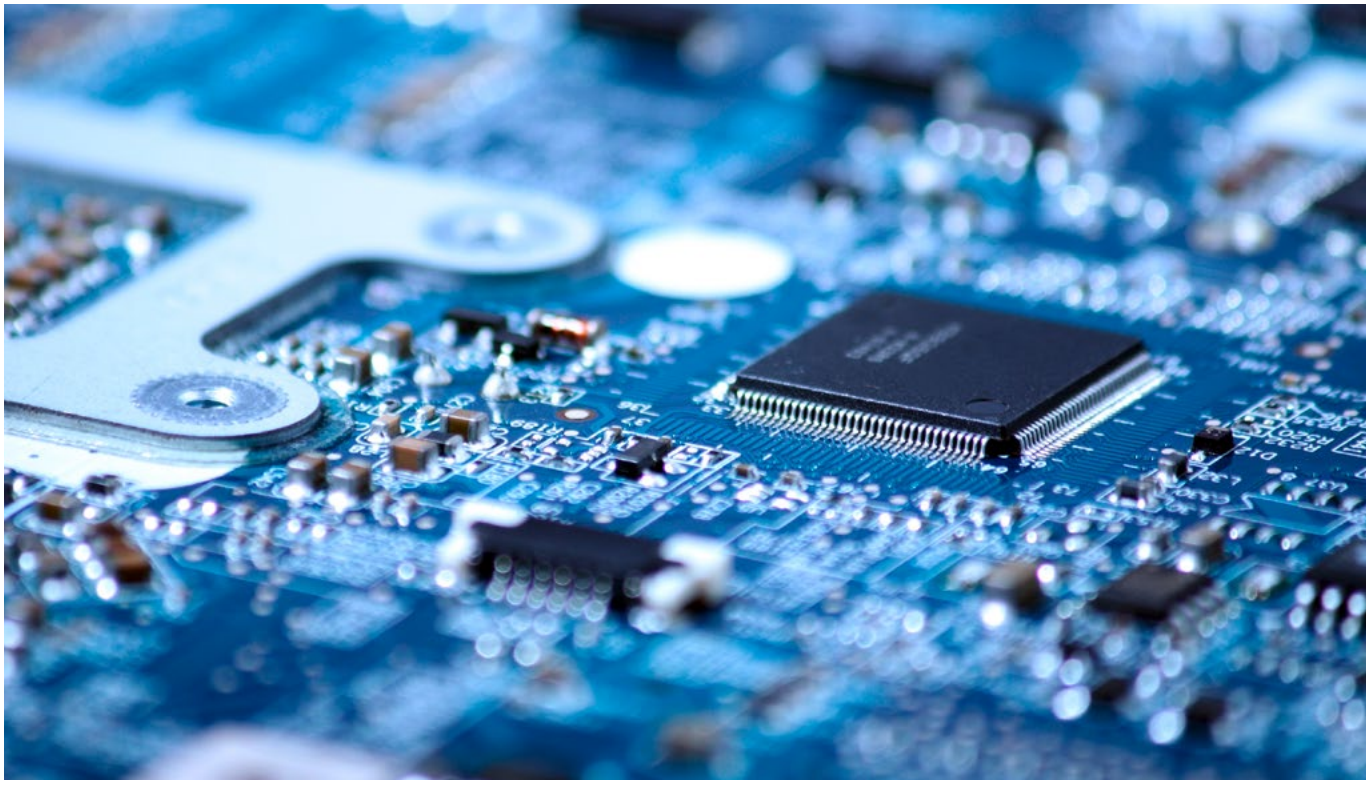

Supporting you with your Chip Design

Seibersdorf Laboratories is dedicated to providing advanced, reliable services to the microelectronic industry. Our expertise and state-of-the-art facilities ensure that our customers receive the highest level of support in the development and validation of their products. Below you will find details of our key services to ensure your microelectronics meet the highest standards of performance and reliability.

RADIATION HARDNESS ASSURANCE (RHA)

The necessity for Radiation Hardness Assurance (RHA) services is paramount in industries where electronic components are subjected to elevated levels of radiation. These services provide comprehensive testing and analysis to guarantee that such components can withstand such environments, thereby maintaining optimal functionality and performance. This is particularly crucial for aerospace, nuclear medicine, defence, automotive and various terrestrial applications where reliability under extreme conditions is non-negotiable.

Furthermore, the growing significance of cosmic radiation effects on the Earth‘s surface underscores the necessity for rigorous RHA measures, even for consumer electronics.

ELECTROMAGNETIC COMPATIBILITY (EMC)

Our laboratory is equipped with state-of-the-art technology and employs highly qualified professionals, enabling us to offer comprehensive and reliable EMC testing services. Our expertise encompasses the evaluation of electronic devices and systems, the generation of globally recognised test reports, the provision of flexible testing schedules, and the provision of expert advice.

We assist our clients in all aspects of EMC-compliant device and system design, including the selection of standards and the interpretation and implementation of EMC requirements in tenders and projects.

OUR SERVICES

RADIATION HARDNESS ASSURANCE TESTING

Our team of experts is dedicated to developing both experimental and numerical methods to thoroughly investigate radiation effects on components and systems in various radiation fields.

- Testing Laboratory for radiation testing: Total Ionizing Dose (TID), Displacement Damage (DD) and Single Event Effect (SEE)
- Compliancy with ECSS, ESCC and MIL-STD
- Accredited exposure for TID testing at the TEC-Laboratory Seibersdorf and in-house SEE laser testing
- Consulting users and manufacturers on the use of products in radiation environments
- Manufacturing of irradiation and test boards according to customer specifications
- R&D of radiation sensors such as RADFET, microdosimeter and PIN diodes
- Distribution of SATDOS, an in-house developed dosimeter payload for nanosatellites

SEE LASER TESTING

Single Event Effect (SEE) laser testing represents an invaluable technique for evaluating the radiation tolerance of electronic components and systems. The process entails the utilisation of high-energy laser pulses to simulate the impact of ionising radiation on electronic devices.

The creation of SEE with a pulsed laser source allows access to spatial resolution and SEE mapping that is not available with traditional heavy ion testing. The monitoring of destructive and non-destructive events enables the immediate results that allow faster development cycles. The precise analysis of the most vulnerable regions within circuits allows for the validation of the effectiveness of radiation-hardness designs.

Typical applications include:

- Screening of parts for both radiation-hard and COTS components
- Accurate localization of events
- Identification of sensitive nodes
- Screening for reliability
- Verification of radiation-hardened circuits
- Design of radiation-hardened electronics
- Conducting of mechanism studies
- Validation and calibration of models
- Testing for lot-to-lot variations
- Mapping of memories
- Conducting of fault injection tests

ELECTROMAGNETIC COMPATIBILITY

Our modern test sites enable us to undertake electromagnetic compatibility (EMC) measurements up to 40 GHz. In our accredited test laboratory, we offer flexible test dates, short turnaround times and Europe-wide and internationally recognised test reports.

We provide support for the fault clearance and hardening of your products, as well as for EMC problems in your research and development projects.

- CE compliance testing, radio, railway, medicine, FCC: Support in EMC-compliant device development from design process to successful acceptance test, PCB-level EMC analysis using an EM scanner.
- Automotive testing: Fully compliant emission and immunity testing of automotive components in our automotive component test chamber and automotive pulse testing according to ISO standards and engineering specifications with our transient test system.
- Special EMC tests, MIL-STD-461, RTCA DO-160, ECSS: Tests on EMC system compatibility and robustness of electronic devices up to 40 GHz, immunity tests for safety-related systems.
- Immunity of electronic implants: Scientific studies on the interaction between electromagnetic fields and implants.

QUALITY STANDARDS

- EN ISO 9001- Quality Management Certification
- ISO/IEC 27001- Information Security Management Certification
- EN ISO/IEC 17025 - Accredited Testing Laboratory No. 312
- TID, DD and SEE Testing compliant with ESCC-22900, MIL-STD-750, ESCC 25100, ESCC 22500 and ECSS standards
- Accredited Verification Laboratory No. 554
- Designated technical service for UN/ECE Regulation 10
- FCC recognition as accredited EMC test laboratory No. 835627

CONTACT

Get in contact with our experts.
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