Simulate, debug and comply to over 50 global standards and regulations

Do you face these EMC test challenges?

- Lack of test capacity or facility
- Risk of redesign and product recall
- Test complexity increasing
- Stay current of standards and regulations
- Shortage of budget and technical resources

Partner with Keysight’s Test-as-a-Service at our accredited EMC Test Lab in Boeblingen, Germany to simulate, debug and comply your equipment under test (EUT) to over 50 global standards and regulations. We have four offerings:

- Design and Test Consulting
- Custom Testing
- Pre-Compliance Testing
- Compliance Testing
Partnership

You know your equipment under test (EUT). We know test.

We are a leading technology company that helps enterprises, service providers, and governments accelerate innovation to connect and secure the world. Twenty-four of the top 25 technology companies use Keysight, and 78 of the Fortune 100 companies are customers. In wireless we were the first to market with 5G solutions, such as the pre-standard 5G protocol test solution selected by Qualcomm, and have executed over 20,000 test scripts for next generation wireless technologies from 2G to 5G.

For our cloud and data center customers, we developed the first software-as-a-service-based visibility-as-a-service, and provides the most comprehensive public and private cloud visibility solutions. A leader in the automotive and energy industry with over 50 solutions launched in 2017 alone including e-Call, RFS, cell formation, charge and discharge. Our automotive R&D centers that serve our customers around the globe are located in Stuttgart, Detroit, and San Francisco Bay Area.

Our engineers have contributed to over 1,700 United States and foreign patents that have been issued or are pending. In addition, our metrologists have codeveloped standards and regulations by participating in multiple governing bodies around the world. This ensures we keep abreast of existing and emerging standards. In 2018, Keysight engineers participate in many standards, regulatory bodies and consortiums such as ANSI, CISPR, OMNIAIR, and PTCRB to name a few. Partnering with us gives you access to our deep knowledge of test, including access to the hardware and software engineers who designed our test solutions.
Design and Test Consulting

Keysight provides

- EMC design and 3D simulation software
- Customized support to aid in simulation setup
- Develop test strategies to achieve compliance
- EMC consultants troubleshoot to root cause
- Regression testing
- Access accredited lab with latest equipment
- Convenient location at Boeblingen, Germany

Benefits

- Minimize design iterations with simulations
- Gain better insight to EMC performance
- Solve design roadblocks with Keysight EMC consultants

Uncover compliance challenges before they occur with our simulation software and experts. With the ultimate goal of improving your design, you will gain better insights into your EMC performance by evaluating designs with our PathWave three-dimensional design simulation software. By simulating various aspects of your design, you can see possible weak spots before building a prototype. By partnering with us, your engineers simulate the circuits, block diagrams, and entire RF path to meet, and our experts will help you setup, debug and simulate faster. The result is fewer prototypes and faster time-to-market. We help you shorten design time with our experts and integrated software across design and test.

Our EMC test experts are available to develop test strategies, perform tests, and run regression testing in our accredited, state-of-the-art EMC Test Lab. And if your engineers run into design challenges, our engineers are ready to debug and help solve your design roadblocks faster. Keysight EMC experts understand why and how measurements are made with their deep domain knowledge of equipment, software, standards and regulations so they can quickly troubleshoot to the root cause. Their expertise is backed by the designers of our hardware and software, and our three automotive research labs. Guidance and support is provided to help you achieve compliance from the start of your design.
Custom Testing

Keepsight provides

- Experienced EMC test engineers
- Access accredited lab with latest equipment
- Tests that follow existing and emerging standards
- Detailed and secure measurement data within two business days of test completion
- Convenient location at Boeblingen, Germany

Benefits

- Validate your EUT without learning the intricacies of standards and regulations
- Speed time-to-market and reduce costs
- Reduce risk of redesign and product recall

Validate your EUT to internal test requirements without having to learn all the intricacies of standards and regulations. Often your designers specify the performance of the EUT to even more stringent tolerances than those found in the standards and regulations. This provides greater test margin and reduces risk of product failure and product recall liability. Our experienced EMC test experts will create a custom test plan to meet your internal test requirements so that you can gain greater measurement insights.

Partner with Keysight with our Test Plan Execution Service to reduce the risk of redesign and product recall. Our EMC test experts have deep measurement knowledge in test procedures and test techniques to help you speed your product schedule and reduce costs. If your engineers are forging new ground, our EMC test experts can reach out to our automotive researchers located at our three research and development centers to gain new knowledge and skills. They can even connect to the designers of our hardware and software solutions so that your unique test needs are met.
Pre-Compliance Testing

Keysight provides

- Access to accredited lab with latest equipment
- Tests that follow existing and emerging standards
- Experienced EMC test engineers make measurements on your safeguarded EUT
- Secure test reports and measurement data within two business days of test completion
- Convenient location at Boeblingen, Germany

Benefits

- Increase confidence to pass future compliance tests
- Accurate and repeatable results the first time
- Reduce test cost with pay-for-use pricing

The industry average tells us that 40% of first-time compliance tests fail. The failure to pass a compliance test is a minimum of a three to four week delay. With Keysight’s state-of-the-art EMC Test Lab and EMC test experts, you can jump start your schedule by validating your EUT to standards and regulations earlier in your design process. Our experts know the why and how measurements are made. They apply measurement principles and use established test processes with test automation. This eliminates testing errors with accurate results the first time, and helps you avoid the risk of redesign at a later phase in your product lifecycle.

Reduce your tests costs by avoiding outfitting your lab with equipment and resources. This helps save on both capital and operating expenses. It eliminates the hassle of renting equipment, assigning resources and setting up your own test lab so that you can focus on the design of your product. With pre-compliance testing you will gain the confidence to pass your future compliance test the first time.
Compliance Testing

Keysight provides

- Access accredited lab with latest equipment
- Tests that follow existing and emerging standards
- Experienced EMC engineers make measurements on your safeguarded EUT
- Detailed and secure compliance test reports, and measurement data within two business days of test completion
- Convenient location at Boeblingen, Germany

Benefits

- Retain your strong quality reputation
- Speed time-to-market and reduce costs
- Reduce redesign and product recall liability

Ensure your EUT conforms to regulations and standards with our experienced EMC test engineers at our accredited and state-of-the-art test lab. Avoid becoming an industry statistic, where 40% of compliance testing fails the first time. Our Keysight experts have a deep domain knowledge of test equipment, software, standards and regulations. They utilize automated tests and established processes to reduce your test errors. We have metrologists and engineers who participate with governing bodies to set emerging standards and regulations. This combination gives us key insights into test requirements to ensure that your EUT will pass compliance testing and save you the time to learn all the intricacies of standards and regulations.

Electromagnetic compatibility (EMC) testing helps you reduce EMC interference, and this increases your product reliability and helps you retain your strong quality reputation by reducing the risk of redesign and product recall liability.

Our compliance testing helps you speed time-to-market and reduce costs. In addition to our EMC test experts, our one lab covers multiple technologies and over 50 global standards and regulations. This large portfolio of solutions at our one-stop accredited test lab limits the number of vendors, reduces logistical complexity, and saves time. This unifies your test needs at one lab and helps avoid errors between different lab facilities. Our Keysight Test-as-a-Service EMC Test Lab is at a convenient location in Boeblingen, Germany near key automotive customers.
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EMC Test Methods

Emissions
- Radiated emissions
- Conducted emissions
- Conducted emissions (Telecom Port)
- Harmonics and flicker

Immunity
- ESD
- Radiated immunity
- EFT/B
- Surge
- Conducted immunity
- Magnetic immunity
- Voltage dips and interrupts

E-Mark (testing)
- REE (NB, BB), CE (NB, BB)
- Transient emissions (slow pulses, fast pulses)
- Transient immunity (ISO 7637-2 (pulses 1-5))
- Radiated immunity (ISO 11452-2,3,4,5)
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**EMC Test Standards**

- IEC/ EN 61326
- IEC/ EN 60601-1-2 (Edition 4 only)
- IEC 61000-6-1, -2, -3, -4
- IEC 61000-4-X, -2, -3, -4, -5, -6, -8, -9, -11
- EN55011
- EN55022/32
- EN55024
- CISPR 32/ DIN EN 55032/ VDE 0878-32:2016-02
- CISPR 35/ DIN EN 55035/ VDE 0878-35:2018-04

**Automotive EMC Testing**

- CISPR 25/ DIN EN 55025
- ISO 7637-2
- ISO 7637-3
- ISO 11452-2
- ISO 11452-4
- ISO 10605:2008
- UN ECE R10.5
- LV 124
- LV 148
- ISO 16750-2

**Product Safety Standards**

- IEC 61010-1
- IEC 60825-1 (laser safety)
Environment Safety Standards

- Temperature
- Humidity
- Shock
- Vibration

Key Standards

- EN 60068-2 (environmental testing of electronic equipment)
- EN 60068-2-1 (Test A. Cold)
- EN 60068-2-2 (Test B. Dry Heat)
- EN 60068-2-14 (Test N. Temperature Variations)
- EN 60068-2-6 (Vibration (sinusoidal))
- EN 60068-2-64 (Vibration, broadband random)
- EN 60068-2-27 (Shock)
- EN 60068-2-31 (Rough handling shocks)
- EN 60068-2-32 (ENV. Test procedures)
- MIL-PRF-28800F – military shock/vibration/bench drop requirements
Conclusion

Partner with us today at our accredited EMC Test Lab in Boeblingen, Germany to simulate, debug, and comply your equipment under test (EUT) to over 50 global standards and regulations. For more information, visit www.keysight.com/find/TestasaService.

Learn more at: www.keysight.com

For more information on Keysight Technologies’ products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus