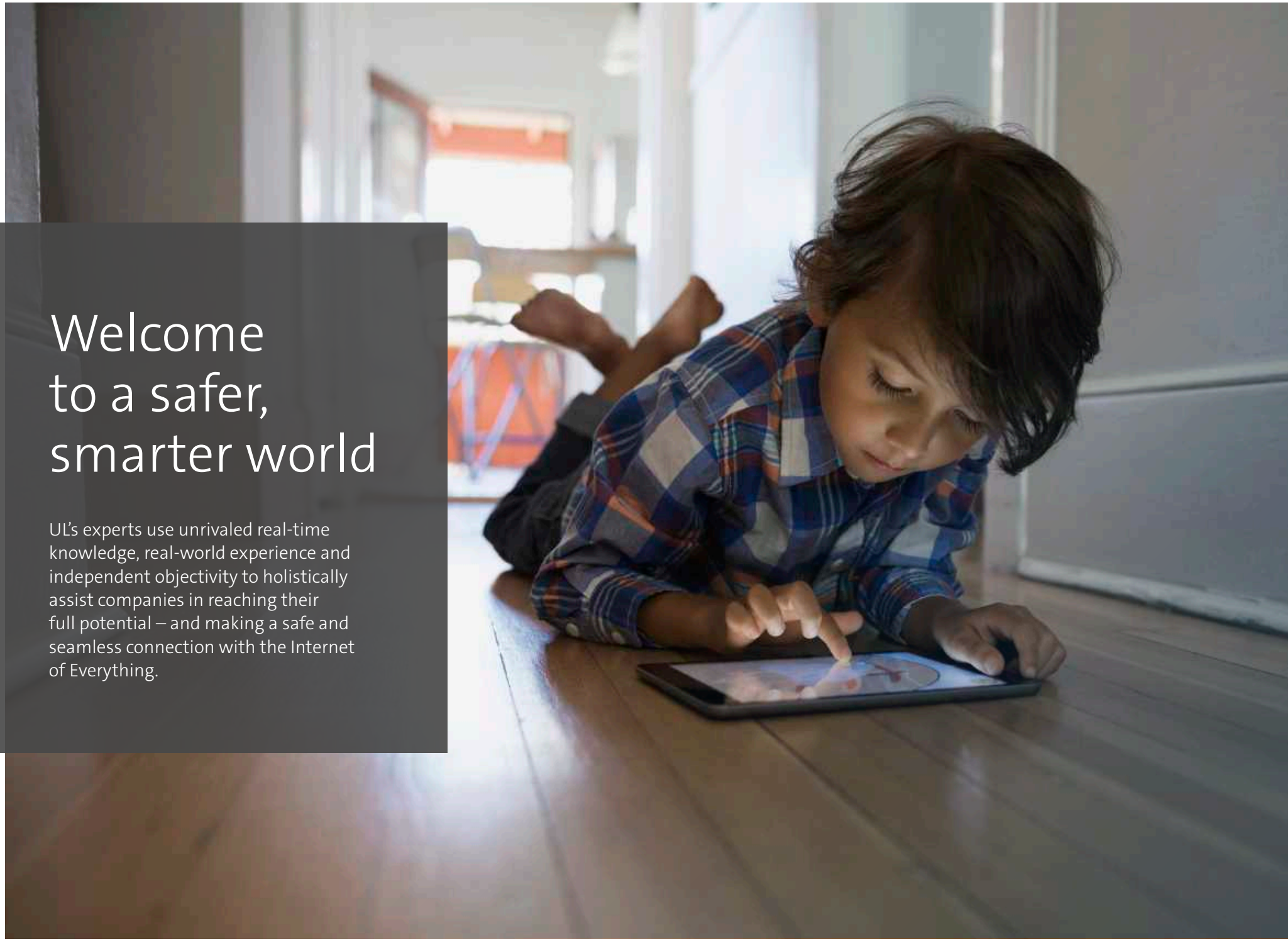

Advancing technology for
the Internet of Everything
Empowering Trust®



Welcome to a safer, smarter world

UL's experts use unrivaled real-time knowledge, real-world experience and independent objectivity to holistically assist companies in reaching their full potential – and making a safe and seamless connection with the Internet of Everything.

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Consumer technology is a hotbed for innovation.

Our customers challenge themselves to come up with faster and smarter products each day. Innovation requires risk-taking but not at the expense of customer safety. At UL, we help you build customer trust through the application of safety expertise.

Market readiness

Charting the road ahead

Complexity creates risk

Pioneering new technologies and products exposes your brand to new challenges. Complex market demands, increasing government requirements, and rapidly changing technology and supply chain dynamics bear the risk of delays in market readiness. Companies need trusted solutions to demonstrate safety, confirm compliance, manage transparency, deliver quality and performance, enhance sustainability, and protect their brand reputation.

Opportunity demands speed

Successful innovation is more than having a clever idea. It means being able to transform that idea into a product that meets a perceived need at a particular time, is safe for consumers, and works well. Today's onslaught of innovation means that the competitive advantage you gain from your innovation may have a short shelf life. You get the most out of it by being efficient, flexible and fast.

By using a trusted source of assistance, you empower your customers to trust you.

UL services include testing, certification, Global Market Access, training and verification.

Fast action requires quick thinking

Quick thinking is essential, but it is only effective when it is based on accurate knowledge – knowledge you can trust. In the fast-paced world of consumer technologies that means using only the latest information and advice on everything from reliability and interoperability, to cybersecurity and compliance criteria of key global markets.

When complexity is the problem, trust is the solution.

Around the globe, UL works with customers and stakeholders to help them navigate market complexity. We bring clarity and empower trust to support the responsible design, production, marketing and purchase of the goods, solutions and innovations of today and tomorrow. We connect people to safer, more secure, sustainable products, services, experiences and environments – enabling smarter choices and better lives.

Learn more: UL.com

Industries

Inspire confidence in your technology

Gain the trust of consumers, and keep it

Whatever your industry, you know that trust is a fragile thing. Consumers must believe in your brand and your product. They must believe that it performs as promised. And that it is safe.

At the same time, the drive to differentiate your product from all the rest – and the tools of technological innovation available to help you do that – means that you may truly be pioneering something new. It may even be so new that the regulations don't yet know how to assess it. And if the regulations don't recognize it, then the market may not allow it.

Put all this together and you see that assistance in testing safety, performance and all the rest is essential. Partner with someone who have in-depth knowledge of cutting-edge technologies and with broad experience in the global regulatory environment.

Automotive and mobility

Even the more inexpensive vehicles incorporate complex electronic subassemblies. As past events have proven, an automotive brand can be severely damaged when these do not work well. Manufacturers need to consider interoperability and battery technology, as well as:

- Radio frequency (RF) testing
- Optical radiation testing
- Interoperability testing
- Safety testing
- Original equipment manufacturer (OEM) electromagnetic compatibility (EMC) testing
- Wireless testing
- Cybersecurity assessment
- e-Bikes Certification

Expert testing, qualification and certification reduce risks and clear the path to consumer confidence and acceptance.

Battery

Batteries are at the very heart of modern mobility, powering the massively expanding number and type of portable devices. Standby, primary and secondary batteries – including lithium-ion battery cells and packs, chargers and adapters – are vital to the proper functioning of stationary devices – all require testing:

- Battery safety testing
- Battery performance
- Lithium-ion battery testing
- CTIA battery certification testing

Consumer electronics

The market for consumer electronics is notoriously competitive, and shifting regulatory and environmental requirements add a further layer of complexity. Manufacturers need to combine low margins with high innovations and demand rapid compliance and well-managed risk. Required tests vary, but may include:

- EMC testing
- Wireless testing
- PTCRB/GCF certification testing
- IEC 62368-1 hazard-based testing
- Augmented, virtual and mixed reality testing
- PCB compliance and regulatory safety testing
- Optical Radiation Testing and Evaluation Services
- Energy efficiency testing

Information and communication technology

One of the primary challenges for information and communication technology (ICT) manufacturers is to combine innovation with verifiable safety. Businesses need to trust in your products, from enterprise-grade servers and electronics to cloud computing and modular data centers (MDC). These tests provide reassurance:

- IEC 62368-1 hazard-based testing
- Verification
- EMC testing
- Energy efficiency testing
- Data Center Certification Program
- Interoperability testing
- Cybersecurity testing

In addition, the environmental regulations that impact your products continue to evolve and expand. And they can be different in every market.

Internet of Things

The number of interconnected digital and electronic devices globally in operation is nearly twice the number of people on the planet – 13 billion devices. From vending machines, factories and logistics to smart cars, smart homes and smart cities, the devices are talking to each other. UL's services include:

- Interoperability testing
- Safety testing
- SAR testing
- EMC testing
- Wireless testing
- PTCRB/GCF testing

Medical devices

The medical and healthcare industry demands a high level of quality, safety and security in the devices it uses. With UL's U.S. Food and Drug Administration (FDA) Accreditation Scheme for Conformity Assessment (ASCA)-accredited laboratories located in nine countries, you can find local support to meet U.S. healthcare market regulations with fewer delays and avoid retesting or providing additional information to the FDA. This is also true for wearable technology (WT) medical and health-monitoring devices, which are poised to make tremendous advances in the coming years. Requirements include:

- ANSI/AAMI 60601-1
- IEC 61010-1
- RF testing
- SAR testing
- Wireless testing
- Medical EMC testing
- Energy efficiency testing

Mobile and telecommunications

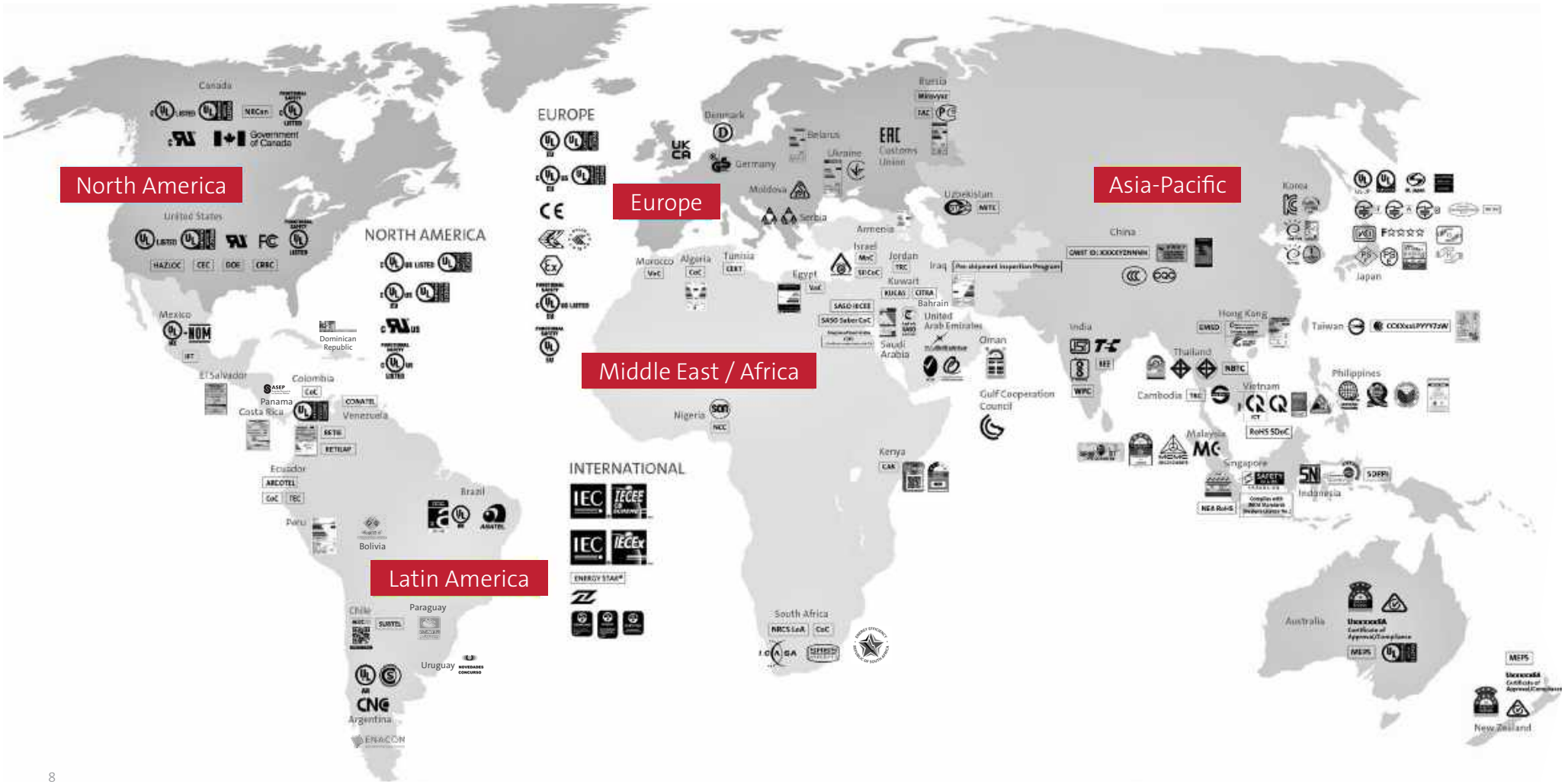
UL helps telecommunications equipment manufacturers keep up with the latest safety and performance requirements for global market success with a portfolio of regulatory, advisory and testing services:

- 5G compliance testing
- Radio Equipment Directive (RED) 2014/53/EU
- GCF and PTCRB certification testing
- EMC testing
- NEBS testing
- SAR testing
- Interoperability testing
- QoS testing
- RF testing
- OTA Testing
- Global Market Access

Global Market Access

Opening a world of opportunity

OUR MISSION-DRIVEN employees are based in **>40 COUNTRIES**



The intricate and ever-changing world of market compliance is complicated. This can frustrate product development and delay market access. Regulations and requirements grow rapidly and change incessantly. Familiar landmarks disappear overnight, and what was true yesterday may not be true tomorrow. This is particularly true of the markets for consumer technology products.

Make it simple

Every market has unique compliance criteria for products sold. But most companies don't have their own in-country experts to advise them on compliance issues. UL does. We can provide the necessary assistance, serving as an agent for manufacturers who need to understand how to gain market access in every target market.

UL cuts through the complexity of Global Market Access and charts a course that gets your product where it's going by the quickest possible route. Part of how we do that is by bundling services for you, so a single submission and a single point of contact give you access to all your target markets at once.

Even captains of industry need local guides. That's what UL provides, all over the world. Our technological and regulatory knowledge is second to none, and we use our knowledge to help you navigate regulatory complexity so you can launch your product on time.

Your job is making things that people want. Our job is to figure out the fastest way for you to get to market.

The earlier you can tell us where you want to go, the quicker we can get you there.

Accelerate speed to market: UL.com/gma

Streamlining compliance

IECEE CB SCHEME

We are truly global. The CB Scheme is a huge international agreement for mutual acceptance of product certification for electrical and electronic equipment. UL is one of the largest and most active CB Scheme members, and we globally operate four National Certification Bodies (NCBs) and more than 50 CB Testing Laboratories (CBTLs).

Established by the International Electrotechnical Commission (IEC), the CB Scheme benefits international manufacturers and distributors by providing:

- A single point of product testing for efficient Global Market Access
- Global acceptance of test reports in more than 56 countries
- Additional acceptance of test reports in many developing countries that are not yet participating in the CB Scheme

CE AND UKCA MARKING

UL is prepared to support changes to product marking schemes for the U.K. and mainland Europe.

We have established the following accredited Notified and Approved Bodies in the EU and U.K., allowing uninterrupted support for customers needing the UKCA mark and other global market access services, including:

- Radio Equipment Directive (RED) 2014/53/EU
- Low Voltage Directive (LVD) 2014/35/EU
- EMC Directive 2014/30/EU
- Medical Devices Directive (MDD)
- Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive 2011/65/EU
- Eco-design of Energy Related Products Directive 2009/125/EC

ENERGY EFFICIENCY

Don't waste your energy. You can achieve greater market acceptance and product differentiation by promoting your efficiency. UL can combine ENERGY STAR® evaluations with other services to test and certify products to a wide range of local, national and international standards, including:

- ENERGY STAR® International
- National Resources Canada (NRCan)
- California Energy Commission (CEC)
- Cool Roof Rating Council (CRRC)
- U.S. Department of Energy (DOE)
- EcoDesign Directive (ErP Directive)
- Minimum Energy Performance Standard (MEPS)

GMA WIRELESS

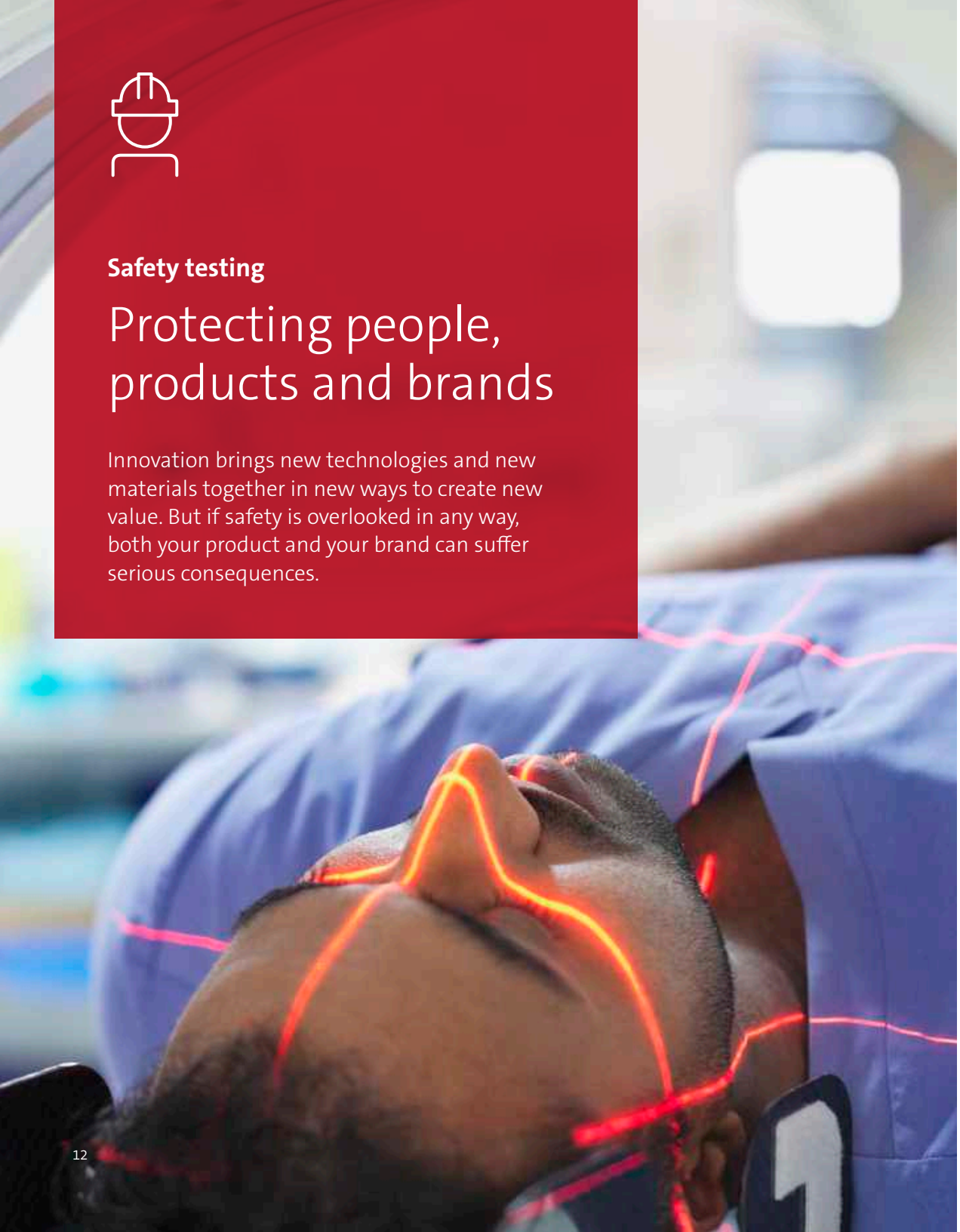
At UL, our Global Market Access services include certification service for wireless, EMC (electromagnetic compatibility) and product safety.

No matter which markets you would like to enter, we can provide all in one service for testing and certifications required in your target countries/regions and assist you in reducing time, cost and labor required for the global launch of your products.

IECEE UL IS THE NO. 1 ISSUER OF CB TEST **REPORTS AND CERTIFICATIONS**

We at UL know how crucial a rapid market launch is today.

Based on UL collaboration with authorities and regulators, early testing and bundled certification programs, we can help to accelerate your go-to-market process.



Safety testing

Protecting people, products and brands

Innovation brings new technologies and new materials together in new ways to create new value. But if safety is overlooked in any way, both your product and your brand can suffer serious consequences.

When we help you to ensure that your we are helping to protect your brand, your company, your friends and your family – and our friends and family, too.

WE HAVE HELPED TO SET

>1,600 Standards

defining **safety, security,**

QUALITY AND SUSTAINABILITY

Realizing your potential in an age of change

Important technologies such as wearables and the Internet of Everything are already changing business as usual. These technologies are increasingly allowing for the automatic command and control of everything – from construction to production to logistics.

On the consumer side, such things as wearables, smart vehicles or homes are giving consumers increased freedom to remain in constant touch, adding flexibility to mobility, and allowing immediate desires to be addressed with real-time action.

For manufacturers, the potential of the future is clear and present. The primary danger lies in overlooking a safety hazard in a new product. Great opportunity is sometimes accompanied by great risk.

You put a lot of time and effort into your products. So, you want to make sure that they work safely. Assessing your product to recognized safety requirements, UL Standards or IEC standards reduces the risk of damage or injury to the end user due to the following: electric shock, energy-related hazards, fire hazards, heat-related hazards, mechanical hazards, radiation and chemical hazards.

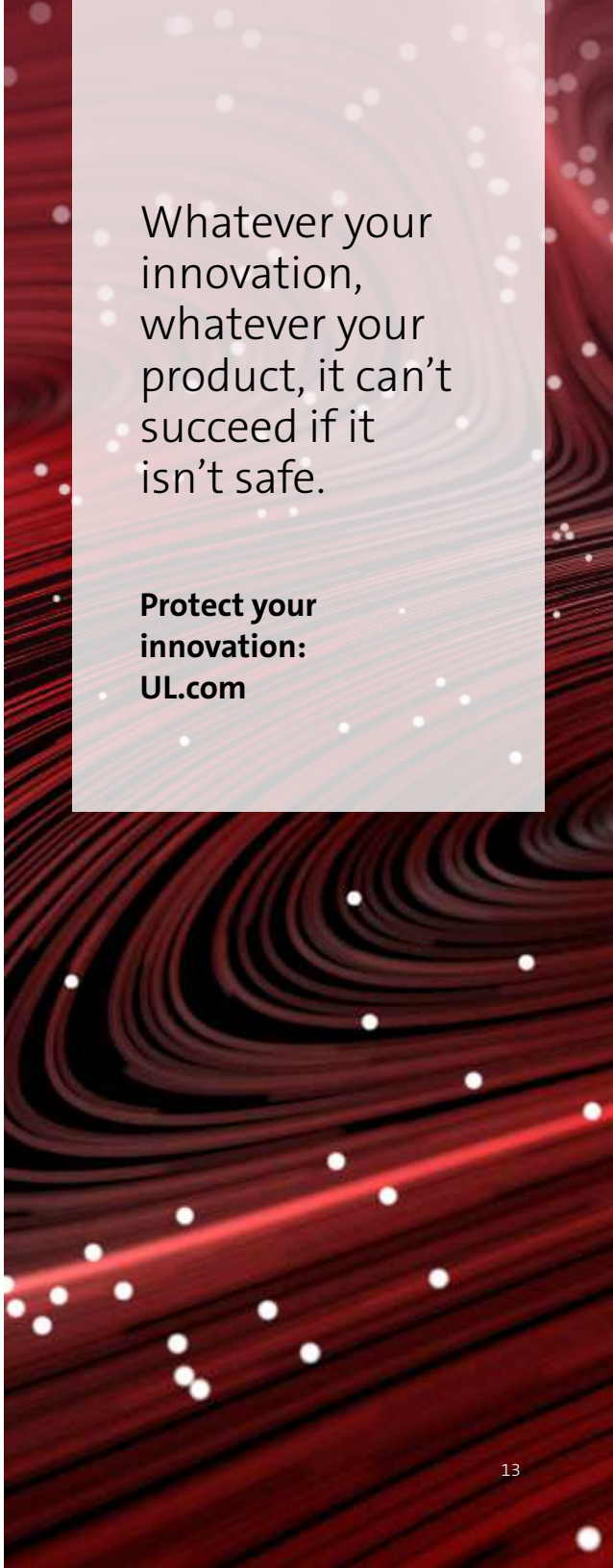
Remember: safety first

Proper safety testing helps you avoid the unfortunate consequences of overlooked details. Micro fuel cells are the next stage in portable power supply, for instance, and getting the correct tests for this transformative technology means using an experienced battery expert. That's also true for the popular lithium-ion battery, where each capacity increase means new safety criteria.

Sometimes, tomorrow's criteria are already there, waiting to be used today. IEC 62368-1 standard, based on the Hazard-Based Safety Engineering (HBSE) principles, is specifically designed to more flexibly accommodate new and innovative designs and technologies. IEC 62368-1 standard 3rd edition will be effective from Jan. 3, 2023. UL can support your transition to the latest edition of this standard.

Meanwhile, as the use of LEDs evolves, so do photobiological safety concerns. Both the American National Standards Institute (ANSI)-based RP-27 and IEC 62471 series of standards address these hazards, while the IEC 62471 series of standards focuses on the broadband ultraviolet (UV) radiation that LEDs may emit. Lasers – present in a growing number of products – should be tested to IEC 60825-1 for most global markets.

EMC and specific absorption rate (SAR) testing also reassures regulators that your product poses no health risks. And precertification review of printed circuit boards (PCBs) and using recognized laminates, solder resists and other components reduce the need for future failure analysis.



Play it safe with advanced technologies

Even more than performance and functionality, safety is at the heart of market acceptance and brand protection. Advanced technologies require careful testing, both to meet regulatory demands and consumer expectations.

Today's consumers are more empowered than ever before to demand safety and quality from product brands. We help you make safety a priority at the design stage and throughout the product life cycle.

ORT – assessing optical radiation

An ever-increasing array of products now incorporate a laser or LED. UL's optical radiation services provide manufacturers with testing and evaluation data that meet their specific needs – from simple optical output measurement results to full IEC CB test reports with CB certificates.

Laser radiation can be hazardous to the eyes or skin under certain circumstances. So, products need appropriate safeguards to protect those who use, maintain and service that product. UL's full-service laser laboratories can test products to laser safety requirements and provide the needed report format to meet FDA/CDRH 21CFR and/or IEC 60825-1 laser safety standards.

LED radiation raises concerns about photobiological safety for those exposed to it, whether from LED bar code imaging, security cameras or a host of other sources. UL's optical radiation laboratories can perform evaluations on all types of LED-based products and help manufacturers confirm and document compliance with the ANSI-based RP-27 and IEC 62471 series of LED radiation safety requirements.

UV radiation emitted by LEDs or lamps is primarily invisible but can present a photobiological safety concern to the eyes and/or skin of those exposed to it. UL can evaluate UV radiation to the relevant safety standard(s), including the IEC 62471 series, the ANSI-based RP-27 series and the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit values for occupational and environmental health requirements.

Batteries – empowering mobility

Mobile devices are now an indispensable part of both business and pleasure. The safety, efficiency and reliability of the batteries that power these products play a key role in continued market acceptance and growth. Universally recognized as the global leader in battery safety testing, UL helps battery manufacturers gain fast, unrestricted access to the world marketplace.

For consumer electronics manufacturers, having their products powered by batteries that are certified by UL helps to further enhance their brand reputation and gain consumers' trust.

UL offers more than 30 years of experience in battery performance testing, helping to foster innovation and boost confidence in battery quality. We test and certify virtually every type of battery product available – including lithium-ion battery cells and packs, chargers and adapters, battery-operated end products – to key international, national and regional regulations, including:

- IEC 60086-1 and IEC 60086-2 Non-rechargeable Performance
- IEC 60086-4 Non-rechargeable Lithium
  IEC 60086-5 Non-rechargeable Alkaline,
  IEC 61951-2 and IEC 61951-2 Performance of Rechargeable Ni-Cd or Ni-MH
- IEC 61960 Performance of Rechargeable Lithium
- IEC 62133 First and Second Edition Rechargeable Nickel or Lithium
- UL2271 LEV battery packs
- Japan's DENAN Ordinance Article 1 Appendix 9
- CTIA—IEEE 1625 and 1725
- Taiwan's BSMI standards
- IATA/UN DOT/UN 38.3 T1-T8 (or IEC 62281)
- UL 1642 Lithium Cell
- UL 2054 Nickel Cell or Lithium/Nickel Packs
- UL 1989 Standby Batteries
- UL/CSA/IEC 60950 (may be evaluated in conjunction with UL 2054)
- UL/CSA/IEC 60065 (batteries used in audio and video equipment)
- UL 62368 – ITE and Audio/Video Equipment

PCB – printed circuit boards

PCBs are essential components of all sophisticated electronic products. So, they need to be safe. We use our extensive knowledge and experience to stringently test the safety of PCBs relative to the end-product requirements, application and use.

Electronics products that incorporate PCBs certified by UL will help manufacturers get peace of mind that their products will perform as intended and in turn, protect their brand reputation.

We test and certify to all major market PCB and PCB-related standards, including:

- UL for 5G™ PCB Reliability Program – to help confirm that your 5G components meet new 5G quality demands
- UL 796 Printed Circuit Boards – for standard rigid, metal-based and HDI PCBs
- UL 796F Flexible Materials Interconnect Constructions – for flexible and flex-rigid PCBs
- UL 746E Polymeric Materials – for industrial laminates and materials used in PCBs
- UL 746F Polymeric Materials – for flexible dielectric film materials
- UL 94 – for flammability of plastic materials
- UL 60950 – Information Technology Equipment
- UL 60065 – Audio and Video Equipment
- UL 62368 – ITE and Audio/Video Equipment
- UL 60601 – Medical Equipment
- UL 60335 – Appliances
- UL 61010 – Industrial Control Equipment
- UL 8750 – LED Equipment

In addition, electronic PCB components and materials certified by UL are eligible for listing as a UL Recognized Component in UL Product iQ™ database. This provides PCB suppliers with the opportunity to better reach potential customers searching for the components and materials they need to complete their subassemblies or end products.

Verification testing

Empower consumers to depend on your product

Many certifications are mandatory for market access – others just make good business sense. In the consumer technology field, reliable performance is a critical factor. Today's educated consumers demand products that perform as promised, right out of the box and throughout a product's expected life cycle. In an age of unbridled social connectivity, word spreads fast. Ensure that your performance is as good as you say it is.

Meet market expectations

UL's performance testing services offer a complete portfolio of functional and engineering evaluations of raw materials and finished products, simulating anticipated real-world usage conditions in controlled laboratory settings. Test programs are designed to provide measurable performance data and, if needed, actionable business intelligence. Reliability testing enables customers to rectify potential defects before launching a product.

Support your brand image

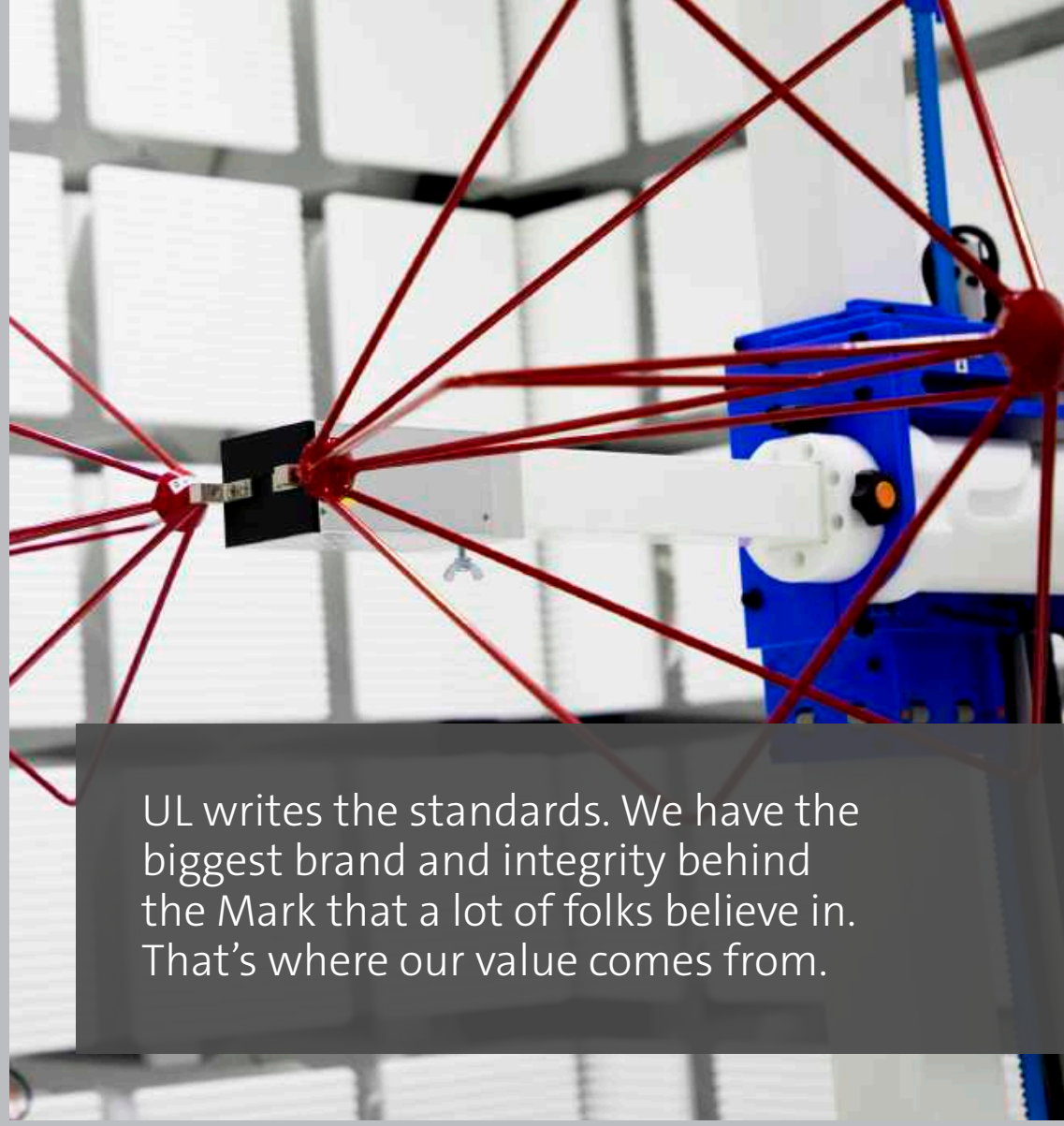
A number of new and varied standards now give manufacturers the opportunity to solidify and enhance their reputation using independent third-party performance and reliability testing. The value of these is recognized by consumers seeking guidance and reassurance, and by market-leading companies seeking to establish or reinforce the public perception of their products.

Marketing Claim Verification

Consumers want to know whether a marketing claim is trustworthy. UL uses science-based tools to test a claim's accuracy. The resulting UL Verified Mark then provides visible proof. Customers receive reassurance, while companies benefit from product differentiation and a stronger brand.

Laser/LED Verification service

Our UL Verified Mark Program for laser/LED products provides independent, third-party marketing claim Verification that your products emit lower levels of radiation, alleviating concerns from users and retailers.



UL writes the standards. We have the biggest brand and integrity behind the Mark that a lot of folks believe in. That's where our value comes from.

UL OPERATES ACROSS MORE THAN **20 INDUSTRIES**

Safeguard your brand: UL.com

EMC and wireless testing

Innovation versus interference

With more and more products needing wireless capability to compete in a rapidly changing marketplace, it's important to make sure your products function both safely and flawlessly in real-world environments. Without external support, it can be difficult to predict what sources of error, interference and, thus, dissatisfaction may appear when your device gets into the hands of real users. Understanding EMC or wireless testing can seem daunting, but UL will guide you through every step of the compliance process to help ensure your product meets the requirements of all your target markets.

OUR DIVERSE **customers** *are based in* **>100 COUNTRIES**

EMC testing: Operability without electromagnetic interference

EMC testing assesses the ability of electronic devices to operate as expected in proximity to other electronic devices or in the presence of electromagnetic emissions.

There are many reasons why it's important to EMC test a product. One reason is to help ensure a product continues to operate as intended and the user experience is not affected by incidental electromagnetic phenomena. Most people have probably observed TV or radio interference from mobile phones – a quirk of the developing technological world, which we normally just live with. This may be trivial; however, in more serious cases, it could affect medical equipment or devices such as pacemakers.

Another reason for EMC testing is that EMC compliance is a mandatory requirement in most markets, including Europe, North America and Asia. UL conducts both EMC immunity and susceptibility testing.

Wireless testing: Real-world functionality is the goal

Wireless testing assesses the real-life performance and functionality of products incorporating wireless technologies, such as Bluetooth, WiFi and cellular connectivity. We assist customers with every aspect of machine-to-machine (M2M) regulations, emerging opportunities in wireless charging, cellular radio frequency regulatory conformance, global testing and approvals for wireless LAN devices, and necessary qualifications for any product using Bluetooth technology.

UL is registered as a TCB/FCB for the U.S. and Canada, a Notified Body for the EMC and RE Directives (2014/53/EU) for Europe, and a Registered Certification Body under Japanese Radio Law. UL is also accredited by NTT DoCoMo and KDDI (Japan) to conduct signaling evaluation testing to W-CDMA and/or Long Term Evolution (LTE) equipped products.

Understanding testing protocols is a tough job. Our satisfaction comes from applying that knowledge to someone's clever idea, helping new products come alive.

Improve customer experience: UL.com

Wireless interoperability testing

Interoperability is the key to smart home adoption

Smart home products have become increasingly complex. The number of possible connections and applications between devices are simply too vast. Even the most amazing devices cannot meet consumers' expectations if they can't work well together.

At UL, we help validate that your product works as expected with all other relevant devices, and conforms to the appropriate smart home standards and technology platforms.

THERE ARE
14,000+
EMPLOYEES
in the UL family of companies

Raising the bar for product-to-product performance

The expectations for the Internet of Everything – connecting products to smart homes, smart cars and smart cities – are high. Consumers request out-of-the-box functionality. They want interoperability, which encompasses multiple devices and settings, with little or no extra configurations.

Manufacturers need to be ready to understand market demands, keep up with the latest technology, and be certain their products are not only ready for market but optimized to stand out from the rest. As such, interoperability can be understood as the chance to take part in a major growth market.

With an almost unlimited range of wireless devices and accessories, as well as different materials, connections and usage scenarios, it's unrealistic for manufacturers to identify every potential interoperability issue.

By providing a series of prelaunch testing, UL can help mitigate the risk of launching a product that falls short in the real world. Interoperability tests – or product-to-product testing – help ensure products work together. To do that, we test your product with a lineup of companion devices that are likely to be encountered during real world use.

Not only can testing for interoperability save significant resources in the long term, it can also help create better product reviews, loyal customers and increased sales.

Our services for interconnectivity-protocol testing include:

- Bluetooth Qualification
- Thread Certification Testing
- Connectivity Standards Alliance (CSA)
- Open Connectivity Forum (OCF)
- AIF specification for ECHONET Lite

Vehicular cybersecurity testing

Keeping cars connected and safe

Manufacturers of cars and network-connectable components successfully design cutting-edge innovations in line with consumer demands for new technology. Yet, they must still seek trusted support to ensure that onboard electronic components work together smoothly – and securely.

No one buys a car without locks. Your car should be safe. Don't leave the door open to cybercrime!

Strengthen security: UL.com

55% OF PEOPLE ASSOCIATED SAFETY WITH UL

*Source: 2014 UL Marks and Badge Study with 400 U.S. consumers

Enjoy the ride – safely

Car buyers today expect that sophisticated in-vehicle electronics are part of the package. They assume that everything works well, works together, keeps passengers safe, protects their privacy, and easily allows their mobile devices to interact with infotainment systems.

These expectations impose an enormous burden on OEMs and component or subassembly producers, particularly when trying to implement new technologies or novel applications.

Testing electronic automotive subassemblies and components, for example, poses the unique challenge of recreating and monitoring actual operation and performance in a laboratory. To do this properly, the laboratory needs to be staffed by experienced experts using state-of-the-art equipment. Manufacturers testing to a lower standard put their business at risk.

Different markets – different rules

Manufacturers face a similar challenge of complexity when it comes to compliance for automotive wireless communication features. These must meet the regulations in the country where the vehicle is purchased, which may differ in significant ways from the regulations of other countries. Relying on assistance from a knowledgeable global partner with a local presence can reduce the stress, as well as time to market.

Reducing cyberattack vulnerabilities

The UL Vehicle Cybersecurity Program (VCSP) assists manufacturers in dealing with the many challenges of digital car security. Based in Fremont in California's Silicon Valley, this cutting-edge research program specifically focuses on the cyberphysical security risks faced by cars, their components and security measures, such as threat analysis, risk assessment, testing for possible vulnerabilities, and validating security protection measures.

UL's range of automotive testing services includes:

- OEM EMC and EMark testing
- Wireless and radio testing
- Interoperability testing
- VCSP
- Global Market Access (Homologation)
- Bluetooth
- Optical radiation services (Lasers, LiDAR, LEDs)
- Wireless charging testing

Training and advisory

Mind the gap

Even before outsourcing became commonplace, no company could do it all. And these days, it's enough of a challenge to keep your cutting edge sharp in core competencies and key business areas. There are always gaps, whether in training your people for something small but critical, or in making the link between a disruptive technology and the compliance criteria that will either allow it onto the market or stop it dead in its tracks. UL's experts use unrivaled real-world knowledge, years of experience and independent objectivity to holistically assist companies to meet their true potential.

UL OFFERS
MORE THAN 450
COURSES THROUGH
UL KNOWLEDGE SERVICES

Train for success with experts

Employee and staff training are more important than ever for today's fast-paced global markets. Your best people demand it – and everyone needs it. Expert-led training is an efficient way to invest in your future success and is available in a number of formats. Whatever the delivery mechanism, training helps you keep your people more informed, more involved and more effective.

Public Seminars: These provide current information, tools and techniques you can immediately apply to real-world situations. Seminars provide an introduction to a new subject or the latest developments in an area of ongoing interest, such as wireless regulatory compliance or the transition from 62368-1 2nd edition to 62368-1 3rd edition from Jan. 3, 2023.

Private Workshops: On-site workshops can be tailored to your specific business needs, for example, some of the issues your product might face in breaking into the markets of South America or India.

e-Learning: UL Knowledge Solutions (formerly known as UL University) is an ideal e-learning platform for busy professionals, global teams and supply chain partners to access standardized training programs anytime, anywhere. Our live instructor-led webinars provide an interactive, safe and easy way to learn, for instance, about hazard-based safety engineering.

Early pre-compliance support

Encountering problems during product certification can lead to costly rework and unpredictable delays. The quicker a design flaw can be discovered and mitigated, the quicker a product can be launched. Precompliance analyzing, testing and evaluation in the design and development phase – or even at the conceptual phase – helps to keep product development and your go-to-market plan on track.

Training gives you an opportunity to reinforce compliance awareness and also to network with peers and share best practices.

Start learning: https://www.ul.com/learning-and-development

The value of trust

Innovation adds a new ingredient to an already complicated world. That means risk, from spiraling development costs, product safety or performance issues, regulatory noncompliance to expensive delays in product launch.

Despite the hazards, companies continue to innovate – because of all the opportunities that innovation offers. Smart cars, smart homes and smart cities virtually cry out for innovation – and reward it handsomely. The Internet of Things, big data and the growing digitization of everyday life mean a surge in the potential for new consumer technology products and the sudden appearance of huge new markets.

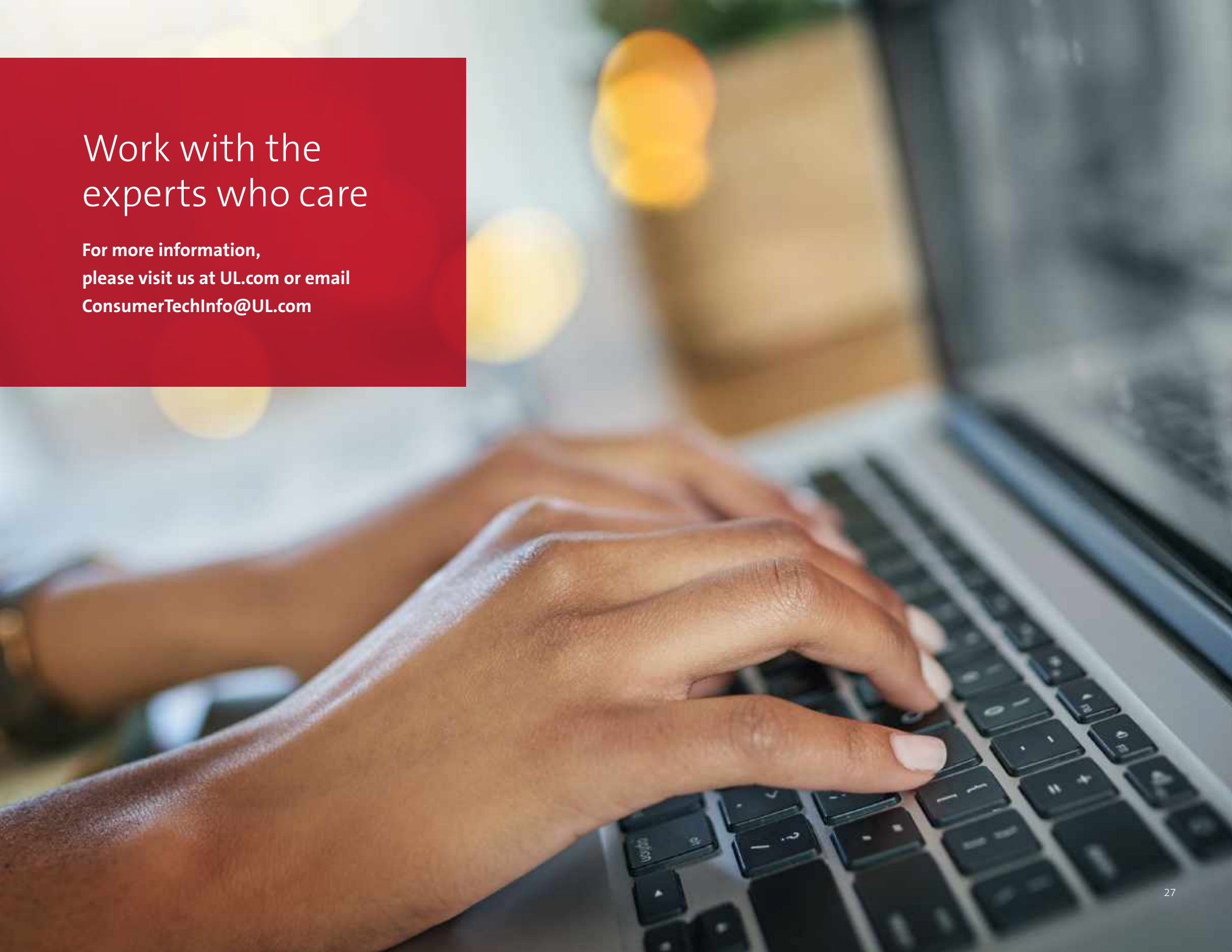
Navigating today's global market is riskier and more complex than ever before. Trust in product and company safety, security, quality and sustainability is vital.

81% of 16,000 global consumers in a 2019 study say that

BRAND TRUST

is a *deciding factor* or *deal breaker*

IN THEIR BUYING DECISION



Work with the experts who care

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UL.com

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