TRUSTED FOR REAL LIFE

**SAFETY, QUALITY AND SUSTAINABILITY SOLUTIONS
FOR THE ELECTRICAL & ELECTRONICS INDUSTRY**

SGS

ELECTRICAL & ELECTRONICS
SERVICES

Electrical and electronic product manufacturers and retailers are under increasing pressure from savvy consumers who demand safe, quality products and are also conscious of sustainability, energy efficiency and social compliance issues. Partnering with SGS helps you deliver well designed, desirable goods that are trusted for real life by ensuring quality, safety and sustainability for retailers and consumers.

SOLUTIONS

- Product Safety Testing & Certification
- International Type Approvals
- EMC (Electromagnetic Compatibility) Compliance
- Hazardous Locations
- Wireless Testing (RF, Bluetooth, Protocol Conformance, WiFi, OTA, etc.)
- Evaluation & Global Certification
- Sustainability (WEEE, ErP compliance, Energy efficiency testing and Energy star certification, Ecodesign implementation.)

CLIENT SPECIFIC SOLUTIONS

- Performance & Reliability
- Retail Programs
- Technical Assistance
- Custom Protocols
- Field Inspections
- Labelling Services

COVERING ALL CONSUMER ELECTRONICS

- Electro medical devices
- Wireless devices & applications
- IT & Telecom
- Audio/Video equipment
- Batteries
- Power supplies
- Power tools
- Household appliances
- Electronic toys
- Vending machines
- Luminaries

TO YOUR ADVANTAGE

SGS can help you to reduce risk, improve efficiency and ensure compliance to contractual or regulatory requirements in all your manufacturing, sourcing, distribution, and retailing operations.

THINKING SUSTAINABLY

Across our global network of sustainability experts we can support your company in its strategy by offering a range of services covering the environmental, safety and social aspects of sustainability:

- RoHS REACH and other Restricted substances management
- Energy: ErP, Energy Star, and other emerging energy requirements
- Ecodesign services
- Environmental audits and suppliers improvement programs
- Social responsibility solutions
- Environmental Communication (EPDs, EPEAT, Green claims, etc.)

YOUR LOCAL PARTNER FOR GLOBAL SOLUTIONS

Today's consumers demand safe, quality products with increasing levels of sustainability. Savvy shoppers have instant access to product data and consumer reviews. It only takes one product recall, one vocal customer/user group or one environmental mistake and your brand may never recover the confidence and trust you've worked so hard to build.

Our global network of laboratories offers solutions at points of manufacture and distribution. SGS can offer the North American market a local network that meets the needs of today's complex international marketplace.

Our US locations dedicated to servicing the Electrical and Electronics industry have the local experts, capabilities and accreditations necessary to provide efficient testing, certification and verification solutions.

NATIONALLY RECOGNIZED TESTING LABORATORY

SGS North America is officially recognized by the Occupational Safety and Health Administration (OSHA), as a Nationally Recognized Testing Laboratory (NRTL) in the US and accredited by the Standards Council of Canada (SCC) in Canada.

For products outside the workplace, SGS is separately accredited to certify products under ISO Guide 65/17065.

FASTER ACCESS TO GLOBAL MARKETS

An IEC CB Scheme test certificate can reduce your need for multiple testing and certifications against electrical standards. The CB Scheme is the International Electrotechnical Commission's (IEC) system for the testing and certification of electrical equipment (IECEE). It promotes the harmonization of national standards with an international standard. Meeting the IEC specification improves the safety and marketability of your products. Recognized in more than 55 countries the scheme has been established for more than 30 years. The CB Scheme is the world's first truly international system for the acceptance of test reports relating to the safety and EMC of electrical and electronic equipment.

SGS' vast and expanding CBTL scope allows it to be a full service provider to manufacturers and suppliers seeking entry into global markets.

ENERGY STAR

The Suwanee, GA facility has received EPA recognition to test, verify and report products in 10 categories – including audio/video, battery charging systems, computers, displays, imaging equipment, servers, set top boxes, telephony, televisions and water coolers – for their eligibility to carry the ENERGY STAR label.

SGS's Atlanta lab joins the SGS labs in Taiwan and China providing EPA-recognized ENERGY STAR services.

As an EPA-recognized testing service, SGS is authorized to measure the energy efficiency of products seeking ENERGY STAR qualification based on EPA specifications and test methods. As an EPA-recognized certification body, SGS is empowered to certify a product's ENERGY STAR eligibility and submit the relevant documentation to the EPA on behalf of the manufacturer or another EPA-recognized testing lab that lacks certification privileges.

PRODUCT SAFETY
CERTIFICATION

Certifications are mandatory in certain countries and for certain products. Voluntary certification schemes are also often required by retailers and/or consumers. To achieve certification and the associated certification mark, goods must undergo product testing and a production assessment.

WHY CERTIFICATION?

- Fast market access for your product
- Competitiveness in more markets
- Send a signal to potential clients that safety is your major focus
- Get higher ratings when you're evaluated by retailers & importers
- Improved reliability - market leading third party proof of product conformity

SGS offers certifications that help you gain a competitive advantage in your markets of interest. The SGS Safety marks allow you to demonstrate that your product fulfils all relevant and applicable product safety requirements.

FINANCIAL BENEFITS

- SGS has No Annual Certification Fee
- Adapt the certification program to your production development plan
- Eliminate design errors that can affect your reputation and market position
- Combined certification and audits save management both time and money.

Our capabilities in product safety testing and certification, combined with our global accreditations allow us to offer you the most appropriate safety marks for your destination market(s). You can see below a sample of SGS safety marks, as well as other national marks for which we can help you.

GLOBAL PRODUCT CERTIFICATION – INTERNATIONAL TYPE APPROVALS

Let SGS help you get your products into new markets. Around the globe, there are country specific requirements that your products need to comply with before importation. E.G.; China's CCC, Taiwan's BSMI, Japan's VCCI, Brazil's INMETRO, etc.

These requirements can include Safety, EMC, Battery, Environmental/Chemical, and/or Energy Use. Our experts can guide you every step of the way to comply with these requirements

and get your product approved. We can support you during the application preparation, country specific testing, factory inspections, and certification.

SGS has accredited, global labs and inspectors that are well known for Safety, EMC, Chemical, and Energy Efficiency testing as well as a rich history with a large network of local approval agencies and in-country partner test labs.

We cover a full range of products such as Radio / Wireless, IT, Medical Devices, Home Appliances, AV, Lighting, etc.

SGS GS   SGS TÜV GS   SGS CEBEC   SGS Fimko

SGS North America   SGS Product Safety   SGS Bauart   SGS TÜV Bauart

CB Scheme   CE Marking   ENEC   HAR

Japan PSE   China CCC   Russia EAC   Korea KC

Australia RCM

EMC ELECTROMAGNETIC COMPATIBILITY

EMC - electrical products must be disturbance free and therefore electromagnetically compatible (EMC) with other E&E equipment. Consumer electronics should not introduce intolerable electromagnetic disturbances into the environment and should not be affected by such disturbances.

The SGS EMC laboratory in Suwanee, GA is equipped with a multiple chambers to accommodate extremely large samples. The 3 meter chamber can support over 2,000 lbs. and the 10 meter chamber can support over 13,000 lbs. Our EMC testing and certification services can help you meet and exceed the requirements set by other national marks, including:

SGS EMC

China CCC

US FCC

CE Marking

CB Scheme

Taiwan BSMI
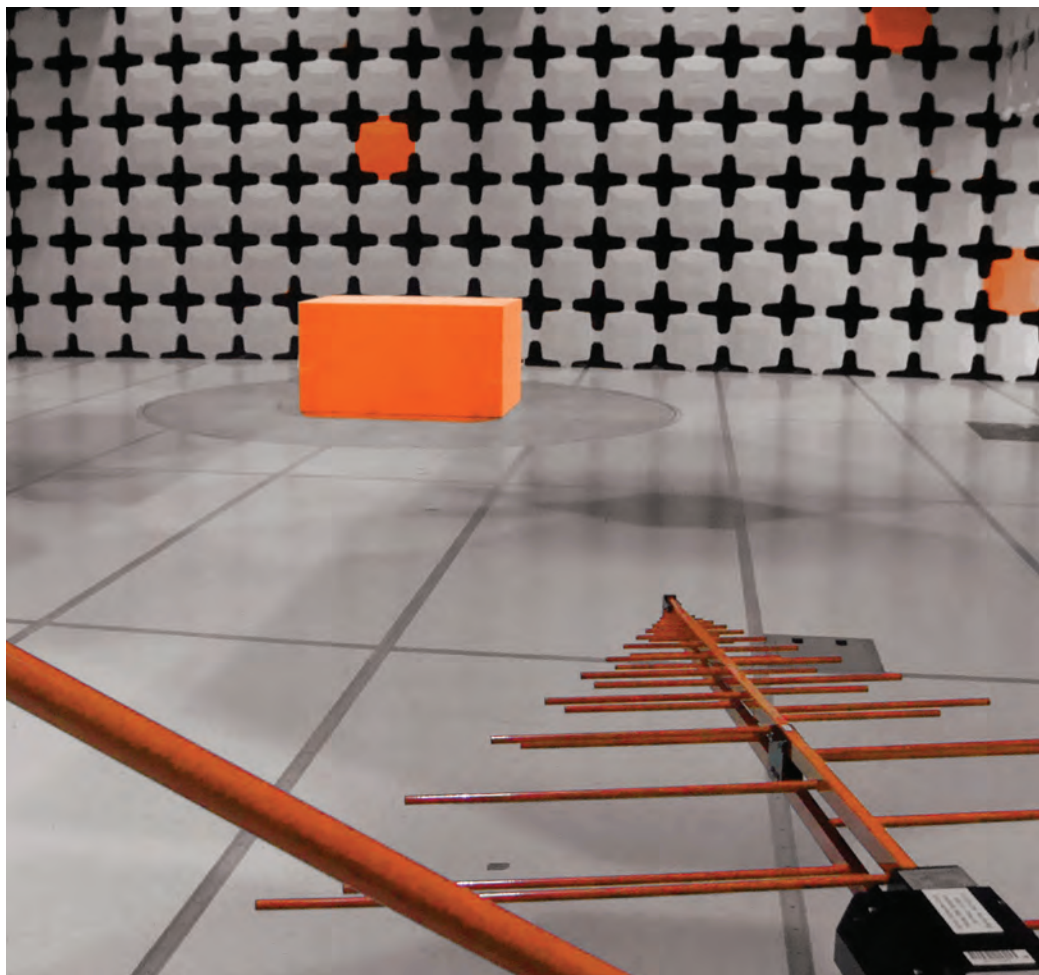

Japan VCCI

e/E mark

Russia EAC

Korea KC

Australia RCM

**Canada ICES-003 Class B
Canada NMB-003 Classe B**

Canada ICES

ENVIRONMENTAL
SUSTAINABILITY

The Four Key Elements of Sustainability in E&E products are Regulatory Compliance, Ecodesign, Supplier Involvement Programs, and Environmental Communication.

REGULATORY COMPLIANCE

There are emerging global regulatory requirements such as WEEE, RoHS, REACH and Proposition 65 that impact the materials being used to manufacture E&E products and the amount of energy a product uses as with ErP.

SGS has over 28 accredited RoHS laboratories worldwide and 1,000 specialists in this field, providing E&E industries with the requisite, independent data to achieve RoHS and other chemical regulatory compliance.

Some of the Restricted Substance Management services we provide include:

- Product risk assessments
- Process gap analysis and consulting
- Full product and material testing to IEC 62321 standards
- XRF screening
- SGS RoHS Certificate of Conformity (CoC)
- Verification services
- Training

Our global lab network can test your products for ErP or other energy related requirements, support technical file preparation, and can also support you to design a more energy efficient product.
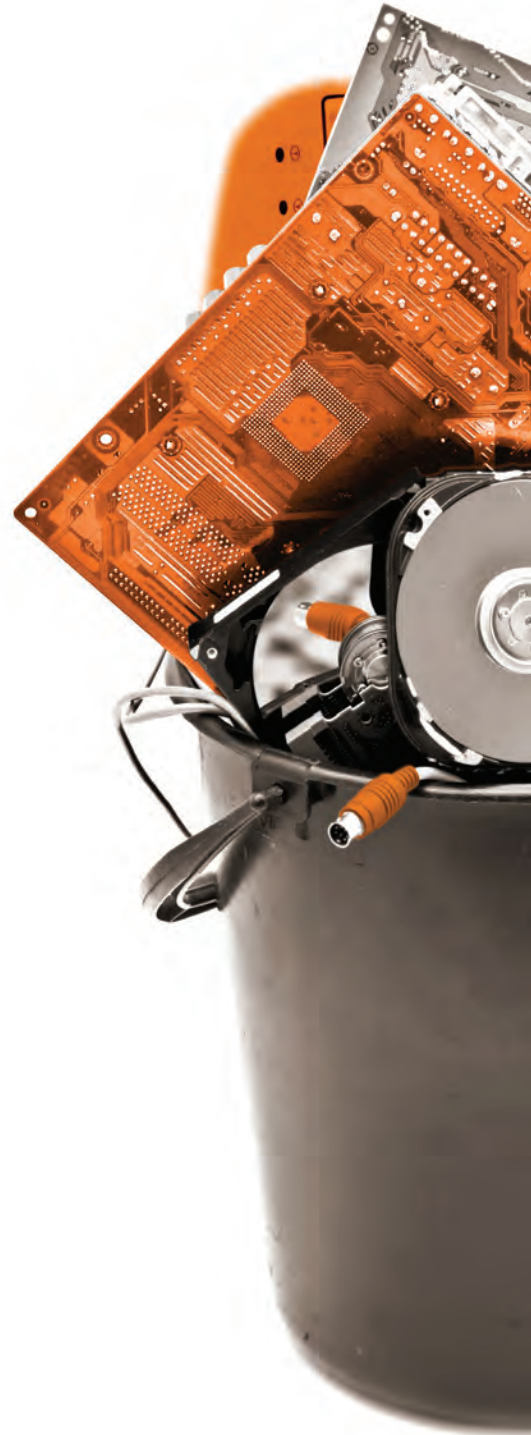
ECODESIGN

Connect your designers with our Environmental Experts.

90% of the corporate carbon footprint of a manufacturer/retailer is embedded in the product's life cycle. Ecodesign, which is guided by ISO 14062, is a systematic process that incorporates significant environmental aspects of a product as well as stakeholder requirements into product design and development. SGS can support you in taking a pragmatic approach to improve your product's environmental impact. We develop tools and methods to make the ecodesign process easy for design teams and stimulate innovation.

ECO BENCHMARK

The Ecodesign Benchmark aims to provide designers with the metrics needed to include environmental requirements in new product design specifications. This service evaluates the environmental footprint of an existing product against another brand, in order to define good design practices. It can also be used to set minimum environmental performance targets. The deliverable provides design teams with guidelines and technical design recommendations. This enables them to comply with environmental regulations, market requirements, industry standards and/or to develop products with a lower environmental footprint than other brands. All without increasing the unit cost, or compromising performance. The benchmark covers energy efficiency, mechanical parts, electronic design and packaging design. It also includes a screening life cycle assessment, a measurement of recyclability and the ease of dismantling for recyclers.

This is a pragmatic approach for designers to successfully implement Ecodesign into the product development process.

SUPPLIER IMPROVEMENT PROGRAMS

Development of supplier audit programs is important to assess the environmental and social cost of outsourcing. The Global Social Compliance Program (GSCP) is a business-driven program for the continuous improvement of working and environmental conditions in global supply chains.

- Verify the compliance of the factories with the local regulation.

- Address major environmental concerns such as the energy, water, waste, hazardous chemicals, etc.

- Identify potential for improvement and cost reduction.

- Measure the risk.

- Increase the awareness of factories and engage an action plan to drive a continuous improvement process.

The Supplier improvement program drives significant cost reductions in the factories by reducing the energy bill and improving the management of the resources.

ENVIRONMENTAL COMMUNICATION

The Product Environmental Profile (PEP) ecopassport program is a type of environmental declaration for electrical and electronic products that helps you communicate sustainability information effectively with customers. A PEP provides a standardized way to determine and communicate environmental impacts such as:

- Carbon Footprint,

- Raw Material Depletion,

- Water Use,

- Acidification

- And others.

Product Environmental Declarations are being requested by a growing number of organizations, from IT to Architecture, so that the products' environmental impact information is considered during the purchase process. These declarations also provide a path to achieving credits within LEED v4, the newest version of the Leadership in Energy and Environmental Design rating system, released in 2013.

In addition to market requirements which have increased the popularity of PEPs, the European Union is developing the guidelines for its Product Environmental Footprint (PEF) program, which will mandate the communication of products environmental impacts. SGS and leaders in the E&E sector are working to shape how this new program will effect environmental communications for E&E products.

PEP & PEF for your commercial electronic products can help you:

- Communicate to customers on impacts and attributes of products

- Differentiate from the competition on calls for tender, and

- Avoid accusations of green washing by employing a standardized communication format.

PERFORMANCE & RELIABILITY TESTING

How do you ensure your products are as good as you think they are?

PERFORMANCE

Performance is related to ensuring a product actually works as well as promised. Performance testing is not related to any directives and in most cases it is performed at the end of the product development stage, after all safety, EMC or chemical tests have been done. It's a comprehensive survey, which entails verifying all relevant test protocols and certificates and creating the required Technical Construction File (TCF).

YOUR BENEFITS

- Find out the real capacity of your product
- Benchmark information to compare with your competitors
- Research and development support

RELIABILITY

Reliability is the ability of an object to perform a required function under given conditions for a given time frame. Reliability testing ensures a product works as expected under normal and extreme conditions.

Such measurements enable manufacturers and retailers to estimate a product's life span and identify weaknesses that might lead to the product's failure.

YOUR BENEFITS

- Lower costs associated with in warranty and after sale product failures
- Higher brand recognition and increased consumer trust in your product

INTRINSIC SAFETY /
HAZARDOUS LOCATIONS

CLASSIFYING HAZARDOUS LOCATIONS

It is important on any job-site to protect the safety of employees as well as valuable equipment. In areas where risk is increased due to the presence of flammable gasses, liquids, particles or electrical equipment the stakes grow higher.

GLOBAL REGULATIONS

All electrical equipment used in locations classified as hazardous must be certified to specific safety standards. SGS provides certification services for product compliance to U.S., Canadian and European standards ensuring your products are ready for sale in the global marketplace. The SGS mark serves as a symbol of compliance recognized by the Occupational Health and Safety Administration (OSHA), the Standards Council of Canada (SCC), and International Accreditation Services (IAS).

UNITED STATES

SGS is accredited to provide certification to popular UL, FM and ISA standards.

- Intrinsic Safety - Division 1
- Non-incendive - Division 2
- Mine Safety and Health Administration (MSHA) - SGS test reports are accepted by MSHA under Part 6 for issuing certification of products to be used in mining environments.

The MSHA program recognizes third party testing as an efficient option for manufacturers to save time and eliminate the cost of repeat testing.

CANADA

SGS is recognized by the Standards Council of Canada for product certification to:

- Intrinsic Safety - Division 1
- Non-incendive - Division 2

EUROPE

SGS offers Atmosphères Explosibles (ATEX) Certification through a UK Notified Body. Our test data and reports are accepted for issuing ATEX certificates.

ELECTRO MEDICAL DEVICES

Get your products to market faster. We know the way.

Achieving a fast time to market requires comprehensive regulatory knowledge and a flexible approach to establish the most appropriate assessment procedure. With specific combinations of tests and audits you can achieve compliance with requirements of multiple certifications at the same time.

TESTING

Our testing portfolio includes:

- EU/International Product Safety, including testing to the IEC/EN60601 and IEC/EN 61010 series and the CB scheme that covers testing requirements of over 55 countries

- US NRTL (UL Standards) and Standards Council of Canada

- EMC Testing (IEC/EN 60601-1-2, and IEC/EN 61326 series including CB scheme)

- Approval for Overlapping EC Directives: Machinery Directive, Personal Protective Equipment; Pressure Equipment; Non Automatic Weighing Equipment; R&TTE

- Functional Safety

- Wireless testing/Telemedicine

- Rechargeable batteries are required to meet IEC 62133

- Restricted substance testing, including testing to RoHS2 requirements for Medical Devices

- Packaging testing

CERTIFICATION

Our range of regulatory and quality audit and certification services cover the following requirements:

- ISO 13485

- ISO 9001 and ISO 14001

- 93/42/EEC as amended by 2007/47/EC (Medical Devices Directive, CE Marking for Europe)

- 98/79/EC (In Vitro Diagnostic Medical Device Directive, CE Marking for Europe)

- CMDCAS (Canadian Medical Devices Regulations)

- 510(k) Support services for test data, advisory, and factory follow-up

- U.S. Food & Drug Administration (FDA) Site Inspections

- JPAL (Japanese Regulations for Medical Devices)

- Other EC Directives (CE marking of PPE, Pressure Vessels, NAWI , and more)

- Global Regulatory Certifications, including third party certifications for Taiwan, Australia, Hong Kong and Brazil (INMETRO)

AND MUCH MORE

Other services related to medical devices include:

- BIOCOMPATIBILITY Evaluation

- Biological evaluation of medical devices according to ISO 10993

- Audits - Supplier Audits, Gap Analysis Audits and Pharmaceutical and Cosmetic GMP Audits

- Clinical trials

- Hygienic Qualification of production facilities

- Microbiological tests of products before and after sterilization

- Product control for possible toxic residues from the sterilization process

- Training, including QMS/Auditing (ISO 13485; internal auditing), Global Regulations (CE marking, FDA, JPAL), Sterilization (Radiation, Ethylene Oxide, Steam), Risk Management (ISO 14971) and Product Safety & EMC (the IEC 60601 series), including Functional Safety

BATTERY SERVICES

Make sure your customers' first impression of your private label batteries is a lasting one. SGS can provide battery comparison testing against national and international standards. We can also provide side by side comparison data and continued validation to make supplier selection an easy task.

ENHANCE QUALITY THROUGHOUT YOUR SUPPLY CHAIN

Need third party verification of packaging, labeling and certifications? Let us manage your supply chain. SGS offers the following services related to batteries:

- ANSI C18.1M-1, C18.2M-1 and C18.3M-1 Performance testing
- IEC 61960-1 Performance testing
- Battery Directive 2006/66/EC Hazardous substance analysis and Capacity
- Third party verification of packaging, labeling and certifications
- Client defined profiles such as device specific and capacity at various temperatures

LITHIUM-ION BATTERIES

One of the advantages of Lithium-ion batteries is their ability to provide longer operation times, when compared to other battery chemistries. This capability can also raise concerns when it comes to safety. Lithium-ion batteries are more likely to present dangers to the customer when mishandled, or not properly manufactured. Two of the primary risks to customers could be battery fire and explosion.

LITHIUM-ION SAFETY TESTING

We offer the following safety testing services related to Lithium-ion batteries:

- ANSI C18.3M-2 Safety testing
- IEC 62133, IEC 60086-X Safety testing for CB Scheme Certification
- UL 1642 Lithium cell safety testing
- UL 2054 Battery safety testing
- IEEE 1725 Battery safety in cellular phones
- IEEE 1625 Battery safety in mobile computing devices (laptop and netbook)
- CB Scheme Certification

To help you address battery safety concerns, we offer safety testing and factory auditing services to ensure your merchandise meets industry accepted criteria. We can also help you specify continued compliance sampling to capture any changes to the qualification lot.

WIRELESS SERVICES

SGS's global network of labs offers true end-to-end testing solutions to mobile manufacturers, carriers, ODMs and OEMs. Our experienced team of engineers provides unique insight and knowledge of the various technologies as part of our testing services offering.

TRUSTED PARTNER

Our wireless experts are active members and contributors to:

- GCF – Global Certification Forum
- PTCRB – PCS Type Certification Review Board
- PVG – PCS Validation Group
- OMA – Open Mobile Alliance
- CTIA – Cellular, Telecom and Internet Association

WIRELESS SERVICES

We operate accredited testing labs providing wireless network system such as radio base stations, broadband access multiplexers (DSLAM), switches or routers for the following services:

- Product safety assessment
- EMC testing
- Product reliability assessment
- (Climatic, Vibration, Earthquake, HALT)
- Air interface testing for radio base stations
- Signaling protocol conformity verification (SIP, SIGTRAN, CCS)
- Pre-compliance testing
- On-site testing
- Test system development
- Notified body
- Compliance management & consultancy
- Thermal simulation
- System certification

MOBILE SERVICES

The SGS E&E service portfolio for cellular mobile terminal manufacturers includes:

- RF & Protocol conformance testing
- LTE/CA/VoLTE/CDMA/EVDO/UMTS/HSDPA/AMR/GSM/GPRS/EDGE
- Bluetooth qualification testing
- Wi-Fi
- Environment reliability testing
- Validation service
- Field testing (IOT)
- SAR & HAC testing
- Health & safety testing
- EU R&TTE test services
- EMC testing
- OTA testing (including MIMO)
- Consultancy services
- International certification schemes
- Near Field Communications (NFC)
- Wireless Power Consortium (WPC)
- Acoustics and more

WHY SGS?

We maintain a highly experienced team of engineers who play an active role in multiple standard boards and are members of various industry groups. We provide comprehensive testing solutions for telecom products through its network of state-of-the-art labs:

- Mobile phone laboratory
- Bluetooth laboratory
- Wi-Fi laboratory
- Network system laboratory
- Safety & EMC laboratory
- Environment reliability laboratory

All our labs are ISO 17025/GCF/PTCRB/CTIA accredited and are strategically located in:

- Asia (Taiwan & Korea)
- US (California, Kansas & New Jersey)

SGS is your one stop shop for M2M certification for various network operators including Verizon, Sprint, AT&T AND T-Mobile.

SGS has expertise in testing industry leading 2G/3G/4G modules which get incorporated in M2M and connected devices. We have tested a variety of M2M and connected devices ranging from Security, Vending, Industrial, Transportation to Utilities, Healthcare, Smart Grid, Wireless Routers and Modems.

RETAIL SOLUTIONS

Our comprehensive services help ensure with confidence that your products comply with regulations, standards and contractual specifications. This allows you to demonstrate due diligence at an early stage in your supply chain, reducing delays and enabling a faster time to market.

TESTS THAT WORK FOR YOU

A tailor-made performance testing program from SGS may include:

PERFORMANCE TESTING

Performance testing includes a minimum of three tests:

- Functionality
- Handling
- Durability/endurance
- Usability
- Benchmarking

SAFETY

- Surveillance screening
- Fault analysis
- Full compliance – against relevant legal requirements

EMC/R&TTE

- Pre-compliance
- Diagnostics
- Full compliance

TECHNICAL DOCUMENT REVIEW

Ensure your paperwork is complete and up-to-date, save time and expense in the event of defects and warranty claims:

- Protocol service
- Technical file assessments

PRODUCT RECALLS

We cover this crucial topic for all retailers and importers through highly customizable services:

- Risk assessments
- Safety issues identification
- Workshops for product development

THE MARK OF SUCCESS

The SGS mark is a symbol that assures your product meets all relevant safety requirements. It allows you to demonstrate your commitment to product safety to consumers. Independent testing and validation demonstrates that a product meets, or exceeds, key purchasing criteria and gives your customers reassurance and peace of mind when choosing to buy.

Using a trusted third party supplier like SGS helps ensure that samples are indeed randomly selected to be an honest representation of the product and not hand pick to only show the best samples.

CONTACT US

We identify the applicable regulations and standards for each of your specific product and target markets. We can help you reduce risk, improve efficiency and ensure compliance to contractual or regulatory requirements in all your manufacturing, sourcing, distribution, and retailing operations.

As you consider your company's compliance challenges, let SGS help you to make the best decisions for your business. To keep abreast of the developments reshaping your industry sector, subscribe to our free publications at:
www.sgs.com/subscribe

CONSUMER COMPACT

Embracing all consumer product segments, it covers international and product news, industry articles and stories about our activities, including case studies and is published quarterly
www.sgs.com/consumercompact

SAFEGUARDS

A technical bulletin concentrating on new and updated product standards, regulations and test methods. SafeGuards is usually published weekly:
www.sgs.com/safeguards

PRODUCT RECALLS

Compiles consumer product recall cases notified in the EU, US and Australia. It can help you minimise recalls by increasing awareness of recall cases related to your business. Product Recalls are published bi-weekly: www.sgs.com/productrecalls

SGS NORTH AMERICA ELECTRICAL & ELECTRONICS LABORATORIES

GEORGIA
620 Old Peachtree Road
Suite 100
Suwanee, GA 30024
770-570-1800

CALIFORNIA
15150 Avenue of Science
Suite 300
San Diego, CA 92128
858-592-7100

KANSAS
11308 Strang Line Road
Lenexa, KS 66215
913-338-2960

NEW JERSEY
291 Fairfield Avenue
Fairfield, NJ 07004
800-777-TEST
973-575-5252

14 Culnen Drive
Branchburg, NJ 08876
908-842-8008

SGS IS THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

WWW.SGS.COM

WHEN YOU NEED TO BE SURE

SGS