

intro

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ELECTRICAL & ELECTRONICS THE NEWSLETTER



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SGS

EDITORIAL

Dear Reader,

Welcome to the first edition of *intro*, the international newsletter from SGS's Electrical & Electronics Division. *intro* embraces electric and electronic services in certification, testing, inspection, assessment and technical assistance across multiple sectors, markets and products.

With this publication we hope to facilitate the spread of important information and news, keeping you informed of changes to the regulatory and environment as well as SGS's activities and development initiatives.

Specifically, *intro* has been created to identify and explain local and global issues that could affect the quality and safety of your products, processes and operations. *intro* aims to mirror your world, to be as full and diverse as your global operations. The assorted stories are the result of contributions from the vast international network of SGS offices.

We trust that you will enjoy this first issue, and would appreciate any suggestions or questions you may have so that we can always respond with the right topics and solutions.



David Chu
Global Business Director
Electrical & Electronics

Holger Busch
Director Electrical & Electronics
Europe & Middle East

EDITORIAL

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SGS ELECTRICAL & ELECTRONICS

SGS E&E – THE INTERNATIONAL NETWORK FOR ALL YOUR ELECTRICAL & ELECTRONICS QUALITY NEEDS

Quality expectations and the range of safety requirements you must satisfy become more complex every day. We offer a complete range of services including testing, product inspection, process assessment and technical assistance that work across markets and geographies. Our global network and expertise provide a single, consolidated source that can help you reduce risk, improve efficiency and ensure compliance to contractual or regulatory requirements in all your manufacturing or sourcing.

We provide the following services through our local, accredited laboratories and certification bodies and help faster market **access for your products** in:

- Audio Video and Car Accessories
- Household and Industrial Appliances
- Illumination
- Power Supply
- IT and Telecommunications
- Electrical Toy Components

SGS E&E SERVICES

SAFETY & EMC

SAFETY

- SGS-TÜV-GS Mark
- SGS-TÜV-Bauart Mark
- SGS-FI Mark
- SGS-CEBEC Mark
- SGS-USTC Mark
- HAR, ENEC and Keymark
- CB Scheme
- CE Marking
- China (CCC) Mark
- Saudi-Arabia Conformity Program
- Australia Safety Approval
- Japan PSE Mark
- Korea EK Mark
- Russia Gost R Mark

EMC

- Europe 89/336/EEC EMC Directive
- SGS EMC eIE Mark
- Automotive Directive E-Mark
- National approvals for Taiwan, USA (FCC), Canada, Russia (GOST R)
- Europe R&TTE Directive and FCC RF Approval

TELECOMMUNICATION

TELECOMMUNICATION

- Europe: GCF, CE R&TTE Directive
- North America: PTCRB, CTIA and FCC
- National & International Telecom Type Approval

BLUETOOTH

- BCIQ and QOB

- Regulatory Testing & International Approval

ROHS & WEEE

- European WEEE & RoHS Directive
- Electrical & Electronic Restricted Substances Testing (Heavy Metal, Flame Retardants)
- Dangerous Substances in Electrical & Electronic Equipment
- Lead Free Soldering Evaluation

MICROELECTRONICS

- Fault and damage analysis
- Incoming goods inspections
- Quality assurance
- Process media monitoring
- Product control, testing, reliability
- Technology and product development

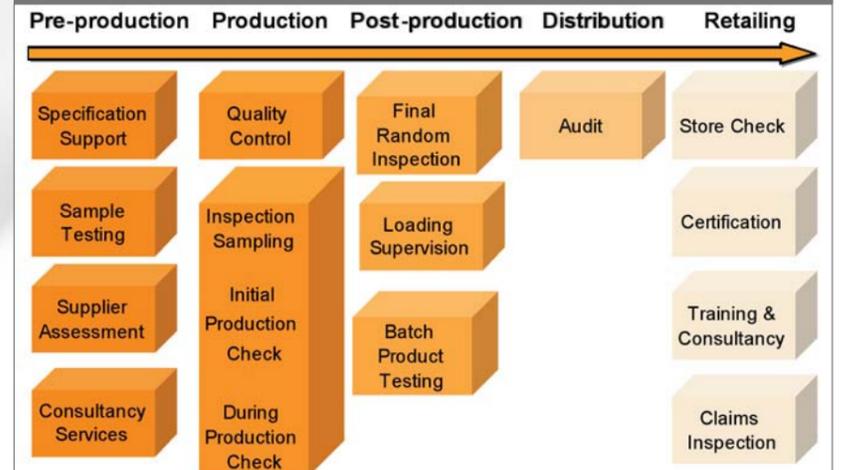
PERFORMANCE & RELIABILITY EVALUATION

- Private Label Program assists retailers to launch their own product requirements
- Custom made product performance specification according to buyer requirements and product specification
- Function check and product life test

INSPECTION SERVICE

- Factory Quality Assessment
- Product Inspection

INSPECTION



SAFETY

INTERNATIONAL TESTING AND CERTIFICATION – KEY TO SEVERAL COUNTRIES

When testing electrical equipment, accessories, tools, machinery and appliances the characteristics of the products are evaluated in many different ways.

Testing should ideally be started at the product development stage, as this gives you an early indication of the product's compliance with the standards, thus allowing any changes to be made in time.

The safety testing is designed to ensure that the product does not cause electrical shock or a fire, radiation or mechanical hazard. Endurance testing is also carried out on most products and prod-

ucts are also checked to make sure that they consist of tested components that comply with the requirements. This should also lead to fewer problems in the maintenance of the product.

SGS offers their customer a wide range of testing and certification variants. For example:

- SGS-TÜV-GS Certification
- SGS-RoHS Verification and Certification
- SGS-CEBEC Certification

On the basis of our testing we are able to grant many different internationally recognised certificates

- Make it faster to bring new products onto the market
- Promote the competitiveness on different markets and
- Reduce product-related risks.

SGS-GS CERTIFICATION MARK – INDICATE SAFETY AND QUALITY OF A PRODUCT



The GS mark (Geprüfte Sicherheit = tested safety) granted by SGS is a well-known and respected impartial certification mark indicating the safety and quality of a product. The

GS mark verifies to the consumer that the product is tested and certified according to the German Act GPSG (Geräte- und Produktesicherheitsgesetz = Equipment and Product Safety Act). The GS mark can only be used on products that have a valid GS certificate granted by SGS.

FOR WHICH PRODUCT TYPES IS THE GS MARK GRANTED?

For GS mark testing European EN standards are usually used. The GS mark is thus valid for most electrical consumer products e.g. illuminations, household appliances, handheld tools, toys, cord extension sets etc.

THE CONDITIONS FOR GRANTING THE GS MARK INCLUDE

- Order in writing: application forms can be obtained from SGS
- Type testing at SGS
- Regular factory inspections (FI) according to European requirements, which can be carried out at the same time as the factory inspection required by FI certification.

THE GS CERTIFICATE WILL BE VALID UNDER CONDITIONS LIKE:

annual FI, identically of products manufactured and the type-tested one, GS maintenance fee is paid annually for each product type.

USE OF THE GS MARK

is also supervised through factory inspection and random tests on products taken from the market. The GS mark can appear on the certified product, in the User's Manual and Installation Guide, in product catalogues and in newspaper, TV and radio advertisements. Additional information regarding the use of the GS mark can be obtained from us. The GS mark is available also in electrical form.

SGS-CEBEC – THE BELGIAN SAFETY MARK GOES GLOBAL



The SGS-CEBEC mark is a

certification mark for low voltage (1000 V) electrical products. The mark is particularly asked for by Belgian consumers, looking for safety, and by the appliance and installation industry, using electrical components with guaranteed quality. But SGS-CEBEC can also provide electrical products worldwide with this Safety Mark, the use is not limited only to Belgium.

In Belgium, a founding member of the EU (European Union), electrical products shall comply with relevant EU Directives. Electrical products with operating voltages between 50 Vac and 1000 Vac (or 75 Vdc – 1500 Vdc) must comply with the Low Voltage Directive. For many products, the EMC Directive is also applicable and, depending on the product characteristics, other directives may be applicable also.

SGS Belgium, division SGS-CEBEC is a "Notified Body" in the framework of the both the Low Voltage Directive and the EMC Directive.

THE SGS-CEBEC CERTIFICATION SYSTEM IS AN EXAMPLE OF A TYPE TESTING CERTIFICATION:

- Typical samples, presenting all design elements, are investigated;
- Production is surveyed by regular inspections;
- Certified products show the certification mark: the CEBEC mark.



SGS-CEBEC MARK ON A PRODUCT MEANS SAFETY AND QUALITY

Products must comply with international safety standards. The standards are based on EN standards developed by CENELEC, which are based on IEC standards. Technical developments are constantly monitored, resulting in an up-to-date set of reliable standards. Furthermore the appliance and installation components are subjected to severe performance and lifecycle tests. Regular inspections at production sites guarantee that products comply with the approved model. Test and certification procedures are performed in a modern and independent laboratory by experienced engineers and technicians.

The **SGS-CEBEC mark means** continued compliance with international safety standards, confirmed by an independent reputable certification body.

The **SGS-CEBEC mark provides** a basis for confidence for the importer in the manufacturer. Also, with the CEBEC mark, the certification file will constitute the requested "technical documentation", without further complications or costs.

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EMC

WORLDWIDE CB-EMC CERTIFICATE

The idea of the global CB-EMC scheme is the same as that of the CB Scheme for safety of products. The CB-EMC certificate granted by SGS Fimko can serve as the basis for application of certification marks or approvals of other countries thus giving access to the world market. Thanks to the CB-EMC certificate the product in question needs not to be retested in different countries and the local certification or approval can happen based on technical documents. Success of the global has been excellent. In 2006 more than 40,000 CB certificates were granted.

IN WHICH COUNTRIES ARE CB-EMC CERTIFICATES RECOGNIZED?

CB-EMC tests and certificates granted by SGS Fimko open a gateway to world markets. CB-EMC tests carried out by SGS Fimko or its CB-EMC laboratories in other countries (China and Korea) are not to be repeated in another country and they are recognized in several countries e.g.

- Finland, The Netherlands, France, Germany, Denmark, Italy, Sweden, Poland, Slovakia and other EU countries
- Switzerland and Norway
- Japan
- Korea

When any other European EMC deviations are also tested, SGS Fimko's CB-EMC certificate can serve as the basis for CE marking to verify the product's compliance with the EMC directive. SGS Fimko's EMC tests are also recognized in Australia and New Zealand for national approvals.



In the future new countries and certifiers, who recognize SGS Fimko's CB-EMC certificates, will become members of the CB-EMC scheme.

TO WHICH PRODUCTS CAN A CB-EMC CERTIFICATE BE GRANTED?

The CB-EMC scheme applies to product for which there is a valid IEC EMC standard and which are included in the scope of the CB Scheme. These products are most electrical, electronic and telecommunication products.

TO WHOM IS THE CB-EMC CERTIFICATE GRANTED?

Manufacturers of electrical, electronic and telecommunication equipment in any country can benefit from the scheme. Countries not covered by the Scheme will be charged a special fee according to the CB-Rules. Yield from the special fee is managed by the IECEE Secretariat.

CONDITIONS FOR GRANTING CB-EMC CERTIFICATE

- Written application
- EMC testing in SGS Fimko's EMC laboratory or in another of SGS Fimko's EMC laboratories

AMENDMENT OF THE AUTOMOTIVE EMC E/E MARK DIRECTIVE (2005/83/EC)

SGS United Kingdom Ltd gains accreditation to this new Commission Directive. The COMMISSION DIRECTIVE 2005/83/EC causes changes in the type approval process, relating to the radio interference (electromagnetic compatibility) of vehicles. Since October 1995 most electrical and electronic devices fitted to road-going vehicles have been required to comply with the Automotive EMC Directive (95/54/EC). In 2006, a

THE BENEFITS OF THE CB-EMC CERTIFICATE

SGS Fimko takes into account any other national deviations. In order to obtain the right to use the certification marks of other countries without repeating any tests, the company shall submit to the other certification bodies:

- A specimen
- Test report
- The CB-EMC certificate
- Any other documentation regarding other relevant requirements

Each certification body sets its own fees for the application process and the use of its mark. SGS Fimko offers to obtain EMC and safety approvals of other countries as a 'turn-key' service package.

USE OF THE CERTIFICATION MARK

Each certification body gives instructions for the use of its certification mark or approvals. We can clarify these as part of our service package.

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new Automotive EMC e/E mark directive (2005/83/EC) comes into force, which changes the type approval process in particular for aftermarket equipment.

The main modifications to the directive include:

- The directive now provides specific standards to allow testing to be carried out by ISO 17025 accredited EMC testing facilities. These results may then be submitted through a Technical Service for certification.



- Furthermore it includes additional requirements for "transient" emission and susceptibility testing.
- Moreover the immunity requirements laid down in the new requirement covering "new technologies" are more stringent than 95/54/EC, which did not require immunity testing at all if equipment did not affect the driver's direct control of the vehicle.
- Aside from the mentioned modifications there are other detailed issues which should not be overlooked. Particularly for vehicle manufacturers, "The vehicle manufacturer must provide a statement of frequency bands, power levels, antenna positions and installation provisions for the installation of RF-transmitters, even if the vehicle is not equipped with RF transmitter at time of type-approval. This should cover all mobile radio services normally used in vehicles. This information must be made publicly available following the type-approval. Vehicle manufacturers must provide evidence that vehicle performance is not adversely affected by such transmitter installations." The issue of after-market fitment of radio transmitters (not just mobile cell phones) is clearly a live one.

Whilst on the surface the new directive appears to create some new obstacles to the manufacturer, with the correct

guidance the transition from the old to new directives can be smooth and trouble free.

SGS United Kingdom Ltd, Durham, currently a Technical Service to the Vehicle Certification Agency (VCA) has been accredited to 2005/83/EC to provide e/E11 approval and certificates in conjunction with the United Kingdom VCA. Furthermore for automotive product and equipment manufacturers and suppliers, SGS United Kingdom Ltd offers extensive testing services such as EMC, Safety and Environmental, providing a single route to e/E11 marking approvals under the highest quality, cost effective and efficient procedures.

Moreover SGS United Kingdom Ltd, as part of a worldwide network of laboratories, constitutes a fully equipped, competent body specifically providing testing services and approvals to European and International Standards and access to recognised International certification marks.

→ For more information please contact your local E&E laboratory which you can find on the last page.

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NEWSFLASH

■ IECQ HSPM QC 080000 – PROOF OF YOUR COMMITMENT TO LEGAL REQUIREMENTS AND ENVIRONMENTAL RESPONSIBILITY

Consistent with the growing demand of environmentally friendly electronic products, the International Electrotechnical Commission (IEC) has introduced the IECQ HSPM QC 080000 standard for Hazardous Substance Process Management (HSPM).

The IECQ HSPM provides a framework for the management of hazardous substance control. The procedure for establishing the HSPM system has four stages: Plan the system / Establish the system / Develop and Execute the system / System Certification and Continuous Improvement. To increase reputation and performance through certification.

→ Find the whole article under: www.SGS.com/iecq

■ JAPAN ADDS ROHS TO EXISTING ENVIRONMENTAL RULES

Japan's Ministry of Economy, Trade and Industry adds the new restrictions to its Law for the Promotion of Effective Utilization of Resources. The addition effectively adopts RoHS-like rules to the country's existing environmental laws.

The six RoHS-banned chemical substances will be disallowed from personal computers (and their displays), televisions, microwaves, clothes dryers, refrigerators and washing machines.

The proposed effective date matches the RoHS deadline of July 1, 2006. At this point, further information – such as detailed exemptions – is not available.

→ Find the whole article under: www.SGS.com/rohs; News

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ROHS & WEEE

THE EUROPEAN COUNTDOWN FOR ROHS IS FINISHED – BUT CHINA POSTPONES ROHS LAW TO 1ST OF MARCH 2007

China finally announced its RoHS law, the “Administration measures on the Control of Pollution Caused by Electronic Information Products” by Ministry of Information Industry (MII). China postponed the enforcement from January 1st to March 1st, 2007.



→ Find the whole article online under www.sgs.com/rohs; News

The scope of the final law has been modestly modified. “Software products” are no longer included, and toys and home appliances will not fall under the scope of the law. But still the scope is uncertain in many other areas and will need further clarification.

According to MII, China will take a two-step approach. Step one, self-declaration of hazardous substances and “safety period”; step two, hazardous substances are restricted to use in the products covered in the catalog.

DIFFERENCES BETWEEN EU ROHS DIRECTIVE AND CHINA ROHS LAW

The scope of China RoHS law was developed completely independently of EU RoHS directive and has little to do with it. That is why many product types that are not within the scope of EU RoHS are within the scope of China RoHS. For example, the China RoHS law addresses non-covered electronic information (EI) products that are comprised of smaller covered EI products differently than the EU RoHS Directive. Furthermore the China RoHS law requires marking standards for all products that are identified in the catalog.

HOW CAN SGS HELP YOU REGARDING ROHS?

SGS RoHS services can be obtained individually or combined according to the need of the customer. In order to find out how to use our services most efficiently and economically we invite you to contact nearest SGS RoHS service office, you will find at the end of this newsletter.

SGS ROHS SERVICES

- **RoHS Certification Services**
- **RoHS for Retailers**
- Can be used in all product development stages.
- We can evaluate the accuracy of components, material and **RoHS** documentation in combination with **EMC** and **SAFETY** testing.
- Separately ordered we can carry out quality management testing on the products or components and material in production, in our laboratory or in the premises or warehouse of the company.
- Laboratory Analysis
- **RoHS VERIFICATION** or RoHS Statement of Conformity: in order to verify that the product complies with the RoHS requirements.

- Consulting regards **WEEE** (Waste of Electrical and Electronic Equipment)
- WEEE and RoHS directive seminars tailored for the company in question.

The **SGS RoHS service provides** you fast with reliable information about the concentration values of hazardous substances. With the help of the statement you can require that the component supplier makes changes in his product. In addition to information about the hazardous substances according to the RoHS directive, you will receive information about other hazardous substances. Trustworthiness, SGS is the leading RoHS testing house in the world.

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ROHS MOBILE SCREENING SERVICE WITH XRF HANDHELD SCANNER

SGS UK recently took delivery of its latest weapon in the fight to provide a fast and effective RoHS screening service to its clients, a state of the art XRF handheld scanner.

Chris Wood, Sales Manager, SGS UK:

“This cost effective service allows us to take RoHS screening right into the warehouse and ensures potential hazardous are identified before the client places the goods on the market.”

Demand for this type of rapid screening analysis has been brought about by a large number of major retailers and importers worried about the impact of the new RoHS Directive (2002/95/EC) and their attempts to ensure only compliant product appears in the stores.

The screening service is tailored to meet the needs of the client being that it is a flexible on-site service which can be part of a normal goods in inspection at the client warehouse or can be planned as an examination screening of;

- products already supplied and held in the warehouse
- random sampling of items delivered thus ensuring product quality is maintained



This screening service can also become part of a diligent RoHS quality plan because it gives answers immediately as to the presence of Restricted Substances therefore highlighting a potential hazard.



→ For more information please contact your local E&E laboratory which you can find on the last page.

ROHS & WEEE

WEEE – FASTEST GROWING ELEMENT IN THE MUNICIPAL WASTE STREAM



The WEEE Directive 2002/96/EC aims to minimise the environmental impact of the disposal of waste electrical equipment by making manufactures, resellers and importers responsible for collection, reuse, recycling and recovery of such waste. The waste equipment is separated according to these different categories and for each of reuse/recycling and recovery targets are defined.



WHO IS AFFECTED?

A company or person who

- manufactures and sells electrical and electronic equipment under their own brand
- resells under his own brand equipment produced by other suppliers
- imports or exports electrical and electronic equipment on a professional basis into a Member State

SGS WEEE REGISTRATION SERVICE

As WEEE requirements are country specific, the WEEE Service SGS provides is an individual service to adapt and conform to each country's regulations. SGS

assists you fulfilling your producer obligations in the EU Member States.

- Identification whether your product falls into the scope of the regulations, especially for those products in grey areas
- WEEE Registration in EU Member States
- Finding a legal and cost effective take-back system for b2b equipment
- Verification and reporting of recycled and recovered quantities

SGS WEEE REPORT –

PRODUCT RECYCLING INFORMATION

The WEEE Report provides recycling

information of your E&E products. This e-document allows you to fulfil your obligation to inform recycling facilities with necessary information.

- Material composition of your product
- Identification of the location of dangerous substances (Annex II)
- Product recyclability

→ More information about WEEE and ROHS services you find in the internet: www.sgs.com/rohs

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SERVICE

TRADE FAIRS

| Date | Fair | Place | SGS |
|---------------------------|--|-----------|-----------|
| August 30th/31st, 2006 | Measuring & Testing 2006 | Helsinki | Finland |
| September 20th/21st, 2006 | Electrical & Communication & Lighting Technology 2006 | Brussels | Belgium |
| October 4th – 6th, 2006 | Technology 2006 | Jyväskylä | Finland |
| October 12th – 17th, 2006 | China Hi-Tech Fair 2006 | Shenzhen | China |
| October 12th – 22nd, 2006 | eMAX Suzhou China 2006 | Suzhou | China |
| October 13th – 16th, 2006 | Hong Kong Electronics Fair | Hong Kong | Hong Kong |
| October 18th – 20th, 2006 | Environmental & Recycling 2006 | Helsinki | Finland |
| October 24th – 28th, 2006 | Mateltec-Electrical & Electronic Equipment | Madrid | Spain |

SEMINARS & TRAININGS

| Seminars | Content | Place | SGS |
|-----------------------|--|--------------------|---------|
| July 7st – 14st, 2006 | Saudi Arabia seminar | Guangzhou/Shenzhen | China |
| July 19st, 2006 | RoHS Seminar | Madrid | Spain |
| Autumn 2006 | Production Quality Assurance | Helsinki | Finland |
| Autumn 2006 | Product Conformity | Helsinki | Finland |
| Autumn 2006 | Compliance 2006 | Helsinki | Finland |
| Autumn 2006 | Lighting and Photometric Measurements | Helsinki | Finland |

LINKS

www.sgs.com/rohs

www.sgs.com/safety

www.sgs.com

→ To receive the quarterly global Consumer Compact and SafeGuards, the regular technical bulletins, please subscribe for free at: www.sgs.com/ConsumerSubscribe

TELECOMMUNICATION

CHANGE OF THE WI-FI ALLIANCE SECURITY CERTIFICATION REQUIREMENT

After March 1st, 2006 there will be an important change to the Wi-Fi alliance security certification requirements. The WPA2 and Extended EAP programs will become mandatory.

Enterprise and Personal devices will also have changes to their requirements.

These changes will affect most high-tech products that require certification after March 1st, 2006. This review offers both a high level and a detailed analysis of the upcoming changes. On March 13th, 2006 the Wi-Fi Alliance will issue an external press announcement on this subject. The net effect of upcoming changes will be higher security for all Wi-Fi CERTIFIED equipment.

The main modifications to the requirement includes. WPA2 for all products. (Full 802.11i standard including AES-based encryption). WEP certification becomes optional and personal device requirements will include:

- WEP-tested if implemented
- WPA-Personal
- WPA2-Personal

Furthermore enterprise device requirements will include:

- WEP-tested if implemented
- WPA-Enterprise
- WPA2-Enterprise (incl. Extended EAP)

Moreover extended EAP for Enterprise products ensures interoperability with authentication features that are critical in enterprise deployments. Due to this the Extended EAP program will become mandatory. That method includes EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC and EAP-SIM.

Furthermore the required Testbed now includes a total of 4 authentication servers and supplicants. The servers are IAS (Internet Authentication Service),



Funk Odyssey Server, Devicescape RADIUS for Linux and MDC (Meeting-house Data Communications) AEGIS Server. And the supplicants are MS Wireless Zero Configuration, Funk Odyssey Client, Devicescape supplicant for windows and MDC client for windows.

These two programs will be included in alliance standard 802.11a, 802.11b, and 802.11g tests starting March 1, 2006. Currently CERTIFIED product versions will not be affected. However when currently CERTIFIED products have changed firmware or hardware, the new requirements will apply, and all products testing for the first time will be tested for the new requirements.

SGS Taiwan Wi-Fi Lab has already updated their services to fulfill the alliance's new requirements for their customers.

Our testing laboratories provide comprehensive testing solutions for telecommunication products.

CLIENT BENEFITS:

- Access global markets
- Prevent costly production errors
- Brand protection

SGS HAS ESTABLISHED MULTIPLE TEST LABORATORIES:

- Mobile Phone Laboratory
- Bluetooth Laboratory
- Wi-Fi Laboratory
- Safety Laboratory
- Environment Reliability Laboratory

→ For more information please contact your local E&E laboratory which you can find on the last page.

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WHEN YOU NEED TO BE SURE

