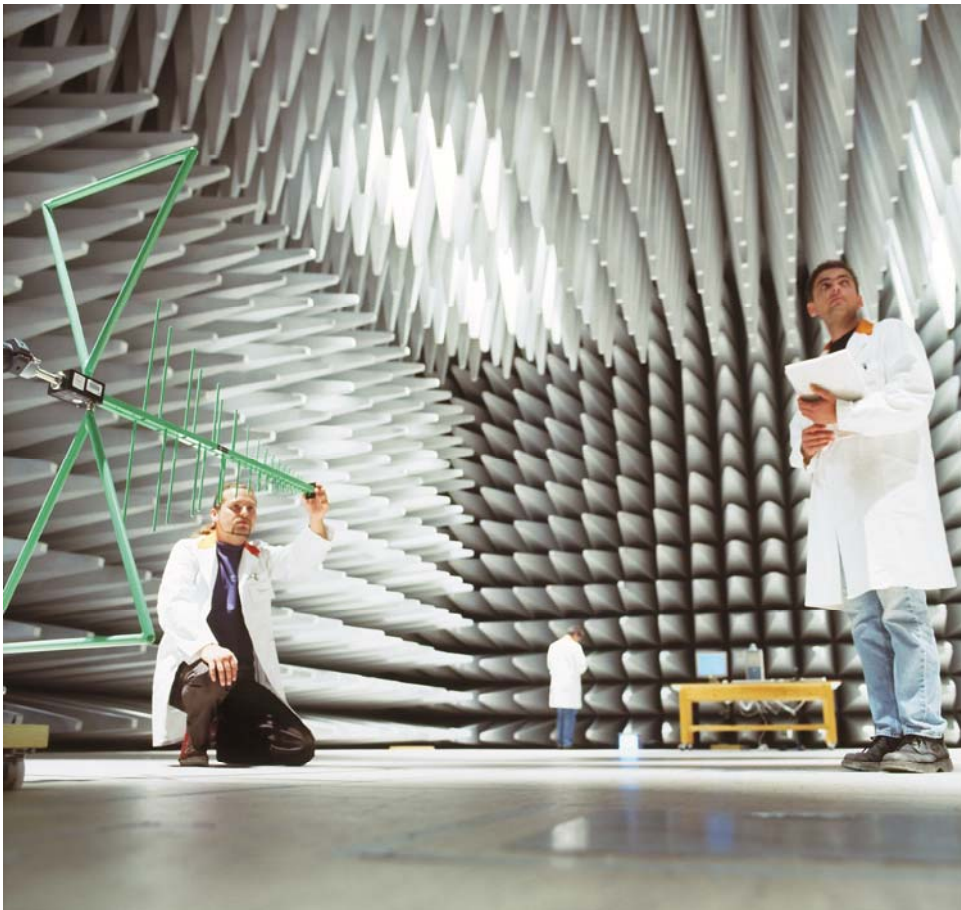# Product Compliance Services

Inhouse and Third Party Product Compliance Laboratories
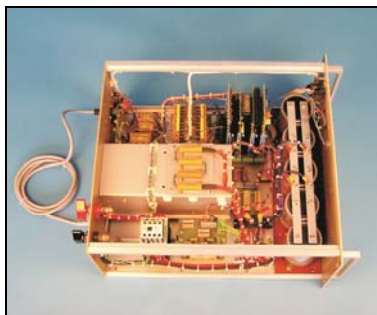
Fujitsu Technology Solutions GmbH

We support our internal and external customers during development of their products with technical services in the fields of

- electro-magnetic compatibility (EMC)
- safety
- climatic, mechanics, acoustics
- ecology, energy efficiency
- wireless technology

We offer consulting, testing and certification services with a background of

- more than 15 years of experience,
- from the viewpoint of a manufacturer,
- the ability to offer products risk assessment,
- and global accreditation e.g. ISO 17025, VCCI, BSMI, C-Tick; CSA, etc.

ELECTROMAGNETIC COMPATIBILITY

(e.g. for personal computers, data processing and communication technology, industrial controllers, domestic appliances and medical equipment)

We provide professional consulting services and support you:
- in meeting electromagnetic requirements (national and international)
- with the debugging of personal computers, industrial controllers and systems

With our fast service, consulting and debugging during the development process, even at short notice!

For your specific needs:
- Complete EMC-CE approval tests (basis for CE mark and approvals) or
- EMC-CE checks of the most critical spots based on many years of experience
- Customer specific measurements

Examples of our range of services:

Emission tests (according to EN, FCC, VCCI, BSMI, C-Tick, etc.):

- Conducted emission
- Electrical field, radiated emission
- Harmonics and flicker
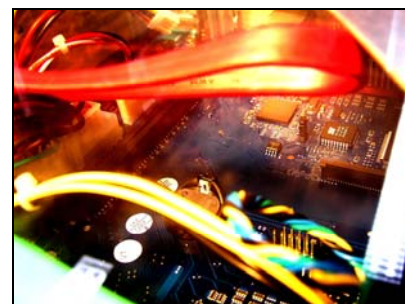
Immunity tests (according to EN, IEC):

- ESD, electrostatic discharge
- Radiated, radio-frequency electromagnetic field
- Burst, fast transient voltage peaks
- Surge, slow high energy voltage peaks
- Conducted disturbances, induced by radio-frequency fields
- Power frequency magnetic fields
- Voltage dips, interruptions and voltage variations

Monitor emission tests:

- According to TCO99, TCO05

Consulting and debugging during the development process:

- EMC engineering (electronics/mechanical construction) on demand from product idea to a complete EMC approval test; customer specific EMC training
- Basic investigations concerning EMC characteristics of cables, components, HF devices, etc.

PRODUCT SAFETY

(e.g. for personal computers, data processing and communication technology, industrial controllers, domestic appliances, medical equipment, etc. according to the requirements of IEC950/EN60950)

We provide professional consulting services and support you:
- in meeting product safety requirements (national and international)
- as well as arrange for compliance certifications (national and international)

With our fast service, consulting and debugging during the development process, even at short notice!

For your specific needs:
- Complete product safety CE approval tests (basis for CE mark and approvals) or
- Product safety CE checks - We check the most critical spots based on many years of experience.
- Customer specific measurements

Examples of our range of services
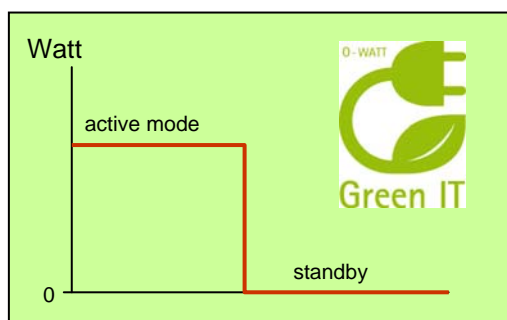
Product safety – visual test:

- Review of the enclosure concerning fire protection/mechanical hazards
- Examination of the clearance and creepage distances (with disassembling of the power supply, check of tracing and position of components in primary and secondary)
- Protective earth connection and markings of the product

Product safety – electrical test:

- Protective earth
- Electric strength
- Leakage current
- Abnormal operating and fault conditions

Product safety – mechanical test:

- Enclosure openings (access to hazardous voltages)
- Mechanical strength and stress relief (with steel ball, steady force and tilt test)

Energy Efficiency, ECO Requirements (Ecology)

e.g. for PCs, servers, industrial PCs, monitors, and all equipment used in residential areas

We provide professional consulting services and support you:
- in meeting the EuP requirements for CE declarations with our fast service even at short notice.

For your specific needs:
- EuP requirements for CE declarations or customer specific measurements
- ECO requirements, e.g. for environmental labels in the case of compatibility checks and registration

Further information for EuP and environmental labels:

Requirements (standby, external power supply):

From January 2010 CE Declarations have to include EuP requirements. Therefore, test reports are mandatory.

- **EuP standby-requirements** are valid for all household and office equipment used in residential areas (EN 55022 - EMC Class B). As of January 2010 „Energy using Products"are allowed to consume 1 Watt (2 Watts with active status display) in standby and/or off-mode. From January 2013, the limit is just ½ Watt (1 Watt with active status display).

- **EuP for external power supply (AC-Adapter)** has to meet efficiency and standby requirements. (e.g. efficiency > 85 %@> 51 Watt) and no-load condition power consumption (e.g. < 0,5 Watt).

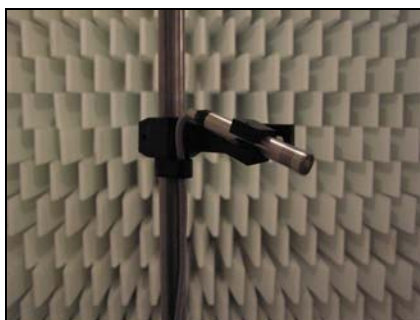**Ways to meet requirements for standby 1 Watt (2 Watts):**

The 1 Watt requirement does not have to be fulfilled for shipment settings. The customer only has to be informed of how he can achieve 1 Watt, e.g. in the manual.

Typical examples for realisation are:
- Use of high efficiency power supplies and components.
- Equipment with on/off switches ("manual handling" only allowed until the end of 2012).

Links:

- Energiebetriebene-Produkte-Gesetz (EBPG) (Energy Powered Product Law) http://www.ebpg.bam.de/de/
- ECODESIGN Directive 2005/32/EC http://ec.europa.eu/enterprise/eco_design/dir2005-32.htm

CLIMATIC TESTS, MECHANICAL TESTS, SOUND EMISSION

e.g. for personal computers, data processing and communication technology, industrial controllers, domestic appliances, medical equipment, etc.)

We provide professional consulting services and support you:
- In meeting climatic, mechanical and sound emission requirements
- In improving your product quality

With our fast service, consulting and debugging during the development process, even at short notice!

For your specific needs:
- Climatic tests, mechanical tests, and sound emission compliant to international standards or
- Customer specific measurements

Examples of our range of services

Thermography (find failure risks) and climatic tests (functional performance):

- Measurement of surface temperatures without thermal couplers
- Find the „hot-spots", identify measurement points for climatic tests.

- Is cooling of critical components, e.g. processor, transformer, choke coil, sufficient?
- What happens to your product if the enclosure openings are blocked?
- Support in the development process of the heat management system

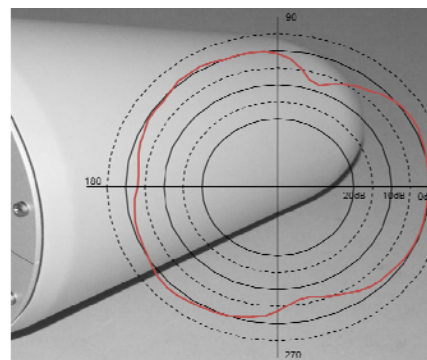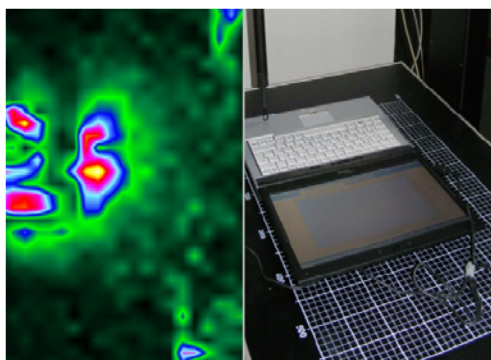**Mechanical tests (functional performance) and packaging tests (drop test, transport test, etc.):**

- Vibration during production and during installation on location by the customer (e.g. vibration in a building caused by cable cars or subways, simulated by a shaker)
- Investigating causes of damages, errors and providing appropriate solutions

- Vibration during packaging, transport or in notebook cases
- Improvement of transport protection, development of solutions

Sound emission (meet your own specification requirements):

- Locate sound sources and provide solutions
- Compare components of different manufacturers

Long term tests (climatic tests, mechanical tests, pollution, durability, abrasion, etc.):

- e.g. for PC notebooks, keyboards, mice, organizers, notebook cases, transport cases for mobile offices, cellular phones, etc. for quality assurance

WIRELESS TECHNOLOGY

(e.g. for PCs, industrial PCs, periphery, sensors, alarm & signalling systems, remote controls, components for automation and medical equipment, etc.)

We offer technical support and consulting for:
- The implementation of wireless technology for your product (also during the development process)
- Regulatory measurements and global certification

through fast testing available at short notice.

Tailored to your particular needs:
- Complete wireless integration in your product
- Performance checks during the development process
- Global certification expertise
- Individually tailored test plans

Summary of our Range of Services:

Implementation of Wireless Technology:

- Technology consulting
- Creation of system and component specifications
- Component evaluation

Performance Measurements:

- Measurement of data rates under various environmental conditions
- Determining the effects of interference
- Interoperability tests

Regulatory Measurements:

- Measurements according to EN 300328, EN 301893 and EN 301489

CERTIFICATION

(e.g. for PCs, industrial PCs, periphery, sensors, alarm & signalling systems, remote controls, components for automation and medical equipment, products including radio modules etc.)

Our pleasure (our experience) is to support you by:

- certification consulting during concept and design phase
- handling of certification requests from your customer
- offering support and clarification of regulatory requirements in sales tenders
- regulatory related preparation of your sales activities and shipments outside the European Union
- optimization of your certification strategy by means of cost minimization and performance growth
- apply for the certificates you need for your market and products
- consulting for CE conformity assessment and CE declaration of conformity
- guidance for choice of EU Notified Bodies

Summary of our Range of Services:

Regulatory certification in the area of EMC and product safety

- USA/Canada: UL/CSA + FCC
- Mexico: NOM
- Argentina: IRAM
- GUS-States: GOST-R and Derivate
- China: CCC
- Taiwan: BSMI
- Vietnam: MIC
- South-Korea: KC and more
- GS-mark („Geprüfte Sicherheit"), TÜV / VDE / NEMKO compliance certification
- Support for Initial Production Inspection (IPI) or Follow-up-audits

Voluntary certification in the area of ergonomics, ecology and energy efficiency

- "Blauer Engel", Nordic Swan, TÜV/ECO-Circle, etc.
- GS-mark („Geprüfte Sicherheit"), TÜV / VDE / NEMKO compliance certification

Voluntary certification in the area of climatic and mechanical tests as well as sound emission

- "Blauer Engel", Nordic Swan, etc.

Regulatory certification in the area of wireless technology

- Global certification