



April 2009

RF/EMC Regulatory Update

Dear Colleague,

We have provided typical questions and answers that represent in most cases technical opinions with justification in FCC and CE requirements. The particulars of the product for certification must be considered with respect to the applicability of these questions and answers. We hope you find our update valuable and welcome your feedback if you have any special needs or questions. Call us at 703-689-0368 for your testing requirements. You can view archived issues of MultiPoint at our [web site](#).

FCC Part 25 Approval Requirements

QUESTION: Our firm manufactures Part 25 earth-station transceivers. Can you explain the requirements for FCC approval?

ANSWER: Global Mobile Personal Communications by Satellite (GMPCS) is a personal communication system providing transnational, regional or global coverage from a constellation of satellites accessible with small and easily transportable terminals. Whether the GMPCS satellite systems are geostationary or non-geostationary, fixed or mobile, broadband or narrowband, global or regional, they are capable of providing telecommunication services directly to end users. GMPCS services include two-way voice, fax, messaging, data and even broadband multimedia. Part 25.133 of the FCC's rules requires earth-station licensees to certify that their transmitters have been tested and found to be within 2 dB of emission limits specified in other sections.

Unlike the certification rules in Part 2, Part 25.133 does not require submission of test data and does not require any equipment authorization to be obtained prior to importation, distribution, sale, or offer for sale. See [FCC Part 25.133](#); see also [FCC Part 25.132](#) (prescribing testing requirement for C-band and Ku-band earth-station transmitters).

FCC certification is required for portable earth-station transceivers per FCC Part 25.129. Certification is optional (allowed) for FCC Part 25 mobile earth-station transceivers designed for operation by end users of satellite communication services per FCC-03-283, and [DA-02-1578](#).

The certification shall also be in accordance with Part 2.1091, Part 25.129(c), Part 25.129(d), Part 25.136(h) and related sections of Part 25. Certification equipment authorization is neither applicable nor optional for mobile Part 25 network infrastructure transceivers, such as feeder-link transmitters and transmitters used for tracking and command uplinks in accordance with FCC-03-283.

Certification is required for Part 25 Ancillary Terrestrial Component (ATC) mobile earth-station transceivers designed for operation by end-users of satellite communication services, in accordance with FCC Part 25.149(c); the certification shall be in accordance with FCC Part 2.1091, FCC Part 25.149(c), FCC Part 25.149 (d) and related sections.

FCC Rules for Biomedical Telemetry Devices

QUESTION: Can you explain the FCC rules for Biomedical Telemetry devices using the same frequency bands as VHF and UHF TV broadcast services?

ANSWER: Biomedical Telemetry devices may operate under the FCC rules as follows:

- Section 15.241: within the band 174 - 216 MHz (TV channels 7 - 13) and limited to Biomedical Telemetry Devices confined to an emissions bandwidth of 200 KHz within the 176 - 216 MHz band.
- Section 15.242: in TV channel bands 7 - 46 (174- 216 and 470-688 MHz.) and limited to Biomedical Telemetry Devices employed within health care facilities, and limited to operate within a single 6 MHz TV channel band as defined in Part 73.
- Part 95 Subpart H: Channel 37 band (608-614 MHz). Note - Part 95 Subpart H - Wireless Medical Telemetry Service (WMTS) is a licensed service requiring a registration process as stated in Section 95.1111 prior to operation.

In all cases, Biomedical Devices must be certified under the equipment authorization provisions of Part 2, subpart J. Except for television Channel 37, Biomedical and Medical Telemetry Devices must avoid using the same television channels used by local television stations. However, local television broadcasters are currently migrating to Digital Television Service (DTS) by broadcasting both a Digital Television (DTV) signal, as well as their traditional analog signal. Some of these new DTV broadcasts may create interference to existing medical devices, requiring the medical devices alter their channel selection to other vacant channels. Channel 37 (608 - 614 MHz) is not assigned to any television broadcaster and is a coordinated, shared channel for Medical Telemetry Devices under Section 95.1111 and the National Astronomy and Observatory Centers under Section 95.1119.

[Link to general information on medical devices](#)

[Link to listing of the current DTV channel assignments](#)

[FDA Notification regarding 460 - 470 MHz band](#)

FCC Rules SAR Testing - Output Power

QUESTION: We are a manufacturer of CDMA cell phones with an RF output power of 24 dBm and the intended emission designator is 1M24F9W. We would like to set our output power to 25 dBm for Specific Absorption Rate (SAR) testing. This setting is 1 dBm over the output power of our production unit target. We have the following questions:

1. Will the FCC accept this procedure?
2. If not, what is the limit for the difference between RF Conducted output power for FCC EMC application reporting and the RF Conducted output power for SAR FCC application reporting?

ANSWER: Please see the following answers to your questions:

1. We believe you should send an inquiry directly to the FCC's knowledge database for a final opinion. Nonetheless, the FCC does not allow raising the output power beyond production target range for SAR evaluation. The cell phone design, components and other factors, can cause the RF output to go into saturation, which would invalidate the SAR results.
2. It is generally inappropriate to compare output power results between EMC and SAR unless the identical procedures and requirements apply. FCC rules require an identical sample (See FCC [Section 2.908](#) and FCC [Section 2.909](#)) as production units to be tested for compliance. Increasing the output power beyond production requirements cannot be treated as differences between EMC and SAR output measurements. A representative production sample should be tested to show SAR compliance. The grantee is responsible for ensuring that all production units comply with the SAR limit.

EU SAR Test Standards

QUESTION: Our firm manufactures and sells wireless devices in Europe. The devices are required meet the Compliance Europe Mark requirements (CE Mark). Recently, I noticed that it appears one of the standards required for our device (EN50361) has been replaced by another standard (EN62209-1). If so, what about EN50360?

ANSWER: Presently, there are no other SAR standards for mobile phones other than EN 50360 for mobile phones, this standard refers to the Council Recommendation for SAR limits, it also mandates the measurement methods of EN 50361. EN 50360 is a harmonized standard under the Radio & Telecommunication Terminal Equipment (R&TTE) Directive, meaning that any product which is marketed in the EU and which falls within the scope of this standard must comply with its requirements.

Other radiation hazard standards that had been harmonized at the end of 2002 are:

- EN 50364: Electronic article surveillance (EAS), radio frequency identification (RFID) and similar applications
- EN 50371: Low power electronic and electrical apparatus
- EN 50385: Radio base stations and fixed terminal stations

There are no harmonized standards for SAR on devices such as WLAN dongle, WiMAX dongle, Walkie-talkie, etc. At this time, manufacturers of these devices need to decide on a set of tests to which to claim compliance. They may also request a Notified Body to advise on a test suite to use and possibly give an opinion on the Technical Construction File (TCF).

There are new standards under development: EN 62209-1 and EN 62209-2. These are generic SAR standards for Head devices and Body devices. They are intended to cover SAR tests on many types of devices. When published and harmonized, it is expected that they may replace EN 50360.

EN 62209 is not yet harmonized. This means that the manufacturer should continue following any existing harmonized standard. If they decide to use EN 62209, then they should obtain a Notified Body opinion. Product Standard to Demonstrate the Compliance of Mobile Phones with the Basic Restrictions Related to Human Exposure to Electromagnetic Fields (300 MHz - 3 GHz).

INTERNATIONAL UPDATE

EU: NEW CENELEC STANDARDS RELEASED THIS MONTH

This is a shortened list of the CENELEC standards published during the past month:

- **EN 61676:2002/A1:2009** (4/2/2009) Medical electrical equipment - Dosimetric instruments used for non-invasive measurement of X-ray tube voltage in diagnostic radiology
- **EN 62321:2009** (4/3/2009) Electrotechnical products - Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)
- **EN 61643-21:2001/A1:2009** (4/8/2009) Low voltage surge protective devices -- Part 21: Surge protective devices connected to telecommunications and signalling networks - Performance requirements and testing methods
- **EN 61094-2:2009** (4/16/2009) Electroacoustics - Measurement microphones -- Part 2: Primary method for pressure calibration of laboratory standard microphones by the reciprocity technique
- **CLC/TR 50481:2009** (4/17/2009) Recommendations on filters for shielded enclosures
- **CLC/TR 50484:2009** (4/17/2009) Recommendations for shielded enclosures
- **EN 50468:2009** (4/22/2009) Resistibility requirements to overvoltages and overcurrents due to lightning for equipment having telecommunication ports
- **EN 61534-22:2009** (4/24/2009) Powertrack systems -- Part 22: Particular requirements for powertrack systems intended for on floor or under floor installation
- **EN 61400-3:2009** (4/24/2009) Wind turbines -- Part 3: Design requirements for offshore wind turbines

See [CENELEC](#) for additional information.

EU: NEW IEC STANDARDS RECENTLY RELEASED

This is a shortened list of the new IEC standards published during the past month:

- **IEC 61558-1** (4/7/2009) Safety of power transformers, power supplies, reactors and similar products - Part 1: General requirements and tests
- **IEC 61000-4-27** (4/7/2009) Electromagnetic compatibility (EMC) - Part 4-27: Testing and measurement techniques - Unbalance, immunity test for equipment with input current not exceeding 16 A per phase
- **IEC 61000-4-28** (4/7/2009) Electromagnetic compatibility (EMC) - Part 4-28: Testing and measurement techniques - Variation of power frequency, immunity test for equipment with input current not exceeding 16 A per phase
- **IEC 61000-3-2** (4/20/2009) Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current \leq 16 A per phase)
- **IEC 61747-5-3** (4/20/2009) Liquid crystal display devices - Part 5-3: Environmental, endurance and mechanical test methods - Glass strength and reliability
- **IEC 60335-2-21** (4/29/2009) Household and similar electrical appliances - Safety - Part 2-21: Particular requirements for storage water heaters
- **IEC 60335-2-44** (4/29/2009) Household and similar electrical appliances - Safety - Part 2-44: Particular requirements for ironers
- **IEC 60335-2-66** (4/29/2009) Household and similar electrical appliances - Safety - Part 2-66: Particular requirements for water-bed heaters
- **IEC 60335-2-75** (4/29/2009) Household and similar electrical appliances - Safety - Part 2-75: Particular requirements for commercial dispensing appliances and vending machines
- **IEC 60335-2-61** (4/29/2009) Household and similar electrical appliances - Safety - Part 2-61: Particular requirements for thermal storage room heaters

See [IEC](#) for additional information.

EU: NEW ETSI STANDARDS RELEASED THIS MONTH

This is a shortened list of the new ETSI standards published during the past month:

- [ETSI SR 000 314 V2.6.1](#) (April 2009) Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards
- [ETSI TS 134 124 V8.3.0](#) (April 2009) Universal Mobile Telecommunications System (UMTS); Electromagnetic compatibility (EMC) requirements for mobile terminals and ancillary equipment (3GPP TS 34.124 version 8.3.0 Release 8)
- [ETSI TR 102 768 V1.1.1](#) (April 2009) Digital Video Broadcasting (DVB); Interaction channel for Satellite Distribution Systems; Guidelines for the use of EN 301 790 in mobile scenarios
- [ETSI TR 122 935 V8.0.0](#) (April 2009) Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Feasibility study on Location Services (LCS) for Wireless Local Area Network (WLAN) interworking (3GPP TR 22.935 version 8.0.0 Release 8)
- [ETSI EN 302 217-2-2 V1.3.1](#) (April 2009) Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 2-2: Digital systems operating in frequency bands where frequency co-ordination is applied; Harmonized EN covering the essential requirements of Article 3.2 of the R&TTE Directive
- [ETSI TR 102 664 V1.1.1](#) (April 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Road Transport and Traffic Telematics (RTTT); Short range radar to be used in the 24 GHz to 29 GHz band; System Reference document

See new [ETSI website](#) for additional information.

FCC: FCC ADOPTS RULES TO EXPAND USE OF 4.9 GHz BROADBAND On April 7, 2009, the FCC adopted a Report and Order and Further Notice of Proposed Rulemaking (Order) addressing 4.9 GHz band rules, as well as miscellaneous Part 90 public safety rules. The rules will help expand and enhance first responders' deployment of broadband communication technologies across the nation in the 4.9 GHz band, thereby helping to stimulate the economy. The new rules will also better enable first responders to more easily share time-sensitive data and streaming video footage in emergencies or life-threatening incidents.

Under the Order, the FCC granted primary status to (1) 4.9 GHz stand-alone, permanent fixed links that are used to deliver broadband service (such as a fixed video surveillance link used to monitor high-risk facilities or environments), and (2) permanent fixed links that connect 4.9 GHz base and mobile stations used to deliver

broadband service (for such uses as supporting broadband communications at "hot-spots" and other fixed public safety broadband networks), as well as connect other public safety networks using spectrum designated for broadband use. The FCC took these actions in order to provide public safety with additional operational flexibility to use the 4.9 GHz band during emergencies and disasters and better enable first responders to share crucial data in their efforts to assist those in need and save lives.

The Order retained the current requirement for individual site-based licensing for all permanent fixed stations. The FCC, however, revised the output power measurement procedures for 4.9 GHz band devices to be the same as those required for devices using digital modulation techniques regulated by Part 15 of the FCC's rules. This rule change is intended to speed deployment of new technologies in the 4.9 GHz band for the benefit of public safety users.

Additionally, the FCC seeks comments on whether to: (1) further amend its rules to reinstate an exemption of 4.9 GHz band applications from certified frequency coordination requirements; (2) impose a more formal "licensee-to-licensee" coordination requirement on primary fixed stations in the 4.9 GHz band; (3) correct and clarify the 4.9 GHz band plan regarding which center frequencies may be licensed when aggregating multiple channels into larger bandwidths; and (4) implement three "clean-up" amendments to Section 90.20 of the FCC's rules relating to the Public Safety Pool Frequency Table and associated limitations. [Link to FCC 09-29](#)

EU: NEW RULES FOR POWER SUPPLIES On April 7, 2009, the EU Commission adopted rules (Regulation No 278/2009) to reduce electricity consumption of external power supplies. The new regulation is aimed to improve the energy performance of external power supplies, which is expected to cut their electricity losses by nearly a third by 2020. The regulation defines the requirements for the energy efficiency of external power supplies and will come into effect in two steps in 2010 and 2011, and correspond to internationally recognized efficiency criteria. [Link](#)

US: TOY SAFETY The US Toy Industry Association (TIA) recently launched the first phase of the Toy Safety Certification Program (TSCP), a new safety assurance program to provide reasonable verification that toys meet applicable mandatory US toy safety standards. The TSCP includes procedures and audit mechanisms for hazard analysis, auditing factory process control and product sample testing.

- The trade was informed via Commercial Information Circular No. 139/2008 that the TIA, in conjunction with the American National Standards Institute (ANSI), announced the Toy Safety Coordination Initiative (later renamed as TSCP) to seek public comments.
- The primary objective of the TSCP is to develop a sustainable system to enhance both the reality and public confidence that toys sold in the US market are safe. The TSCP applies to toys that are produced for sale in the US and is designed to assure that toys manufactured in any nation conform to the safety standards used and accepted by the US government and market. Applicants for toy safety certification are responsible for meeting the basic requirements of the TSCP which are: (a) hazard and risk assessment for toy product design; (b) factory process control audits by an independent audit body; and (c) production sample testing by an accredited laboratory to validate that the factory is producing toys that meet US safety standards. The above three elements will be verified or audited by accredited certification bodies.
- Upon successful completion of the applicable requirements (certification), the product or packaging may bear a Toy Safety Mark. This Mark will be controlled by product certification bodies that are overseen by a single accreditation body (ANSI), authorized by TIA. This Mark will help assure consumers, retailers, government agencies and others that the toy bearing the mark will comply with applicable US regulations and consensus safety standards.
- The first phase of implementation began in February 2009 with the launch of a web-based Electronic Certification System (ECS) that provides a comprehensive workflow to help domestic manufacturers and importers of toys to the US efficiently meet the General Certificates of Compliance requirements of the US Consumer Product Safety Improvement Act of 2008 (CPSIA). Additional components of the TSCP and its ECS will be phased in throughout 2009 in accordance with the schedule of requirements in the CPSIA.
- TIA has launched a website "www.toycertification.org", where traders can learn more about the TSCP. The website presents information including TSCP requirements, certification process, governance and timeline.

JAPAN: VCCI REPORT OF COMPLIANCE As of March 31, 2009, the VCCI will no longer accept paper submittals of Conformity Verification Reports. Effective April 1, 2009, there only method to submit a report of compliance is via the VCCI website utilizing a new form. The new form allows the submitter of the report the ability to look at 1) the status of being- applied report, 2) lists of all previous proceeded reports sent by a sender after April 1, 2009 (New and Addition/Modification). In order to use a new form, the submitter's information must be registered for a first time use only. [Link](#)



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Rhein Tech Laboratories' worldwide homologation services offer the best strategy for gaining product approval in a large number of target countries. In addition, we reduce the number of emissions, immunity, and product safety tests required by defining the minimum subset of regulatory standards at the onset, thus reducing the time and cost to enter multiple target countries. We offer research and approvals in over 50 countries.

ABOUT US

RTL has provided EMC compliance engineering & testing services since 1988 and has a superior reputation with both the Federal Communications Commission and others in the industry. RTL provides testing services to meet the emissions, immunity, and safety requirements of the European EMC Directive and the EU R&TTE Directive, all FCC rules and regulations, VCCI (Japan), ACMA (Australia), and other international standards.

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