



July 2007

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 at 703-689-0368 or view archived issues of MultiPoint at our [web site](#).

Updated SAR Test Procedures

QUESTION: We are designing an 802.11a device and we would like to know if there are any additional SAR measurement procedures that specifically address 802.11 a/b/g devices?

ANSWER: Yes, FCC's Office of Engineering and Technology recently updated the SAR measurement procedures for 802.11 a/b/g transmitters. This document is Revision 1.2 and it supersedes previously published Revision 1.1. [Link](#)

FCC Rules for Garage Door Opener

QUESTION: Our firm plans to manufacture a universal garage door opener which simultaneously transmits on four discrete frequencies between 300-400 MHz. What are the FCC's rules for our device?

ANSWER: An intentional radiator operating in the 300- 400 MHz frequency band is subject to the technical and administrative requirements in 47 CFR Part 15. The technical requirements for garage door openers and remote control and security devices are in Part 15.231. However, the simultaneous transmission of multiple control signals of an intentional radiator under Part 15.231 is not permitted.

FCC Digital Radio Requirements

QUESTION: Our company plans to develop a 64 Kbps digital radio and we intend to have it FCC certified so that it may be sold in the US. What are the FCC requirements under FCC Part 90 for this device?

ANSWER: The FCC allows transmitters operating under FCC Rule Part 90, (Business, Industrial and Public Safety) Section 90.203(j)(3), to meet a minimum spectrum efficiency for voice of one voice channel per 12.5 kHz of channel bandwidth and a minimum data rate of 4,800 bits per 6.25 kHz of channel bandwidth. Other technical requirements under Part 90 are for frequency stability, under Section 90.213; transient frequency behavior, under Section 90.214; and station power limits, under Section 90.205. There are no baseband/format requirements for digital modulation. The certification procedure as outlined in Part 2.1033(c) should be followed.

FCC Rules for WMTS Transmitters

QUESTION: Our company plans to design and market a spread spectrum transmitter operating under the Wireless Medical Telemetry Service (WMTS). What are the FCC rules for the certification of our transmitter?

ANSWER: Subpart H of Part 95 describes the requirements for spread spectrum transmitters operating in the Wireless Medical Telemetry Service. WMTS requires a capability to operate in one or more 1.5 MHz channel(s) as specified in Section 95.1115(d)(2) of the Rules. Spread Spectrum devices that operate in the WMTS bands under Part 95H require the 1.5 MHz channel mode in the event there are frequency coordination issues as specified in Section 95.1115(d)(4). The application should have test data for the 1.5 MHz channel mode. In addition, there should be two line items in the application (one for each mode) and grant conditions stating that there is a 1.5 MHz channel mode to support frequency coordination, if the spread spectrum mode causes frequency coordination issues.

INTERNATIONAL UPDATE

EU: NEW CENELEC STANDARDS RELEASED THIS MONTH

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

- **EN 62282-3-1:2007** (6/20/2007) Fuel cell technologies -- Part 3-1: Stationary fuel cell power systems - Safety
- **EN 60068-2-82:2007** (6/22/2007) Environmental testing -- Part 2-82: Tests - Test Tx: Whisker test methods for electronic and electric components
- **EN 60670-21:2007** (6/29/2007) Boxes and enclosures for electrical accessories for household and similar fixed electrical installations -- Part 21: Particular requirements for boxes and enclosures with provision for suspension means
- **EN 60587:2007** (7/4/2007) Electrical insulating materials used under severe ambient conditions - Test methods for evaluating resistance to tracking and erosion
- **EN 61290-10-4:2007** (7/6/2007) Optical amplifiers - Test methods -- Part 10-4: Multichannel parameters - Interpolated source subtraction method using an optical spectrum analyzer
- **EN 61340-3-1:2007** (7/6/2007) Electrostatics -- Part 3-1: Methods for simulation of electrostatic effects - Human body model (HBM) electrostatic discharge test waveforms
- **EN 60664-1:2007** (7/13/2007) Insulation coordination for equipment within low-voltage systems -- Part 1: Principles, requirements and tests
- **EN 60947-1:2007** (7/19/2007) Low-voltage switchgear and controlgear -- Part 1: General rules
- **EN 60079-1:2007** (7/20/2007) Explosive atmospheres -- Part 1: Equipment protection by flameproof enclosures "d"
- **EN 61557-8:2007** (7/20/2007) Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures -- Part 8: Insulation monitoring devices for IT systems

See www.cenelec.org 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 60519-11** (6/22/2007) Safety in electroheat installations - Part 11: Particular requirements for installations using the effect of electromagnetic forces on liquid metals
- **IEC 61023** (6/27/2007) Maritime navigation and radiocommunication equipment and systems - Marine speed and distance measuring equipment (SDME) - Performance requirements, methods of testing and required test results
- **IEC 61097-1** (6/27/2007) Global maritime distress and safety system (GMDSS) - Part 1: Radar transponder - Marine search and rescue (SART) - Operational and performance requirements, methods of testing and required test results
- **IEC 60601-1-9** (7/10/2007) Medical electrical equipment - Part 1-9: General requirements for basic

safety and essential performance - Collateral Standard: Requirements for environmentally conscious design

- **CISPR 16-1-1-am2** (7/11/2007) Amendment 2 - Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus
- **IEC 60255-22-3** (7/11/2007) Measuring relays and protection equipment - Part 22-3: Electrical disturbance tests - Radiated electromagnetic field immunity
- **IEC 61800-5-1** (7/16/2007) Adjustable speed electrical power drive systems - Part 5-1: Safety requirements - Electrical, thermal and energy
- **CISPR 16-4-4** (7/16/2007) Specification for radio disturbance and immunity measuring apparatus and methods - Part 4-4: Uncertainties, statistics and limit modelling - Statistics of complaints and a model for the calculation of limits for the protection of radio services
- **CISPR 16-SER** (7/16/2007) Specification for radio disturbance and immunity measuring apparatus and methods - ALL PARTS

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 EN 300 220-2 V2.1.2](#) (June 2007) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- [ETSI TR 134 926 V7.0.0](#) (June 2007) Universal Mobile Telecommunications System (UMTS); Electromagnetic compatibility (EMC); Table of international requirements for mobile terminals and ancillary equipment (3GPP TR 34.926 version 7.0.0 Release 7)
- [ETSI EN 301 166-1 V1.2.1](#) (July 2007) Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector; Part 1: Technical characteristics and methods of measurement
- [ETSI EN 301 166-2 V1.2.1](#) (July 2007) Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
- [ETSI EN 300 113-1 V1.6.1](#) (July 2007) Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 1: Technical characteristics and methods of measurement
- [ETSI EN 300 113-2 V1.4.1](#) (July 2007) Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive

See [ETSI](#) for additional information.

FCC: MORE EFFICIENT SPECTRUM FOR THE 2.4 & 5 GHz BANDS

On June 22, 2007, the FCC released ET Docket No. 03-201 in response to Part 2 and Part 15 rule modification requests. No rule modifications were allowed at this time, however the FCC requested public comment to analyze the necessity of a "spectrum etiquette" plan that would limit the operation of unlicensed devices under Part 15.247 and 15.249 in order to enable a more efficient spectrum sharing among them. The "spectrum etiquette" is based on a listen- before-talk procedure in which each device would be required to incorporate a mechanism for monitoring the spectrum before transmitting. Transmission would then take place only if no signal above a threshold level is detected. [Link](#)

CANADA: AMENDMENTS TO SEVERAL STANDARDS

In June 2007, Industry Canada released the following amendments to existing telecommunication device requirements:

- o [CB-01, Issue 2](#): Requirements for Certification Bodies.
- o [CB-02, Issue 3](#): Recognition Criteria, and Administrative and Operational Requirements Applicable to Certification Bodies for the Certification of Radio Apparatus to Industry Canada's Standards and Specifications-.
- o [CB-03, Issue 2](#): Requirements for the Certification of Radio Apparatus to Industry Canada's Standards and Specification
- o [DC-01, Issue 2](#): Procedure for Declaration of Conformity and Registration of Terminal Equipment.
- o [Self-Marking, Issue 3](#): Self-Marking of the Certification/Registration Number on Terminal Equipment Application, Procedure and Agreement.

EU: COMMISSION'S WRC-07 OBJECTIVES

On July 2, 2007, The EU Commission adopted a Communication establishing the EU's positions on the goals to be achieved at the 2007 World Radiocommunication Conference (WRC-07) of the International Telecommunication Union (ITU).

The EC highlighted the following EU objectives for Member States negotiating at WRC-07 should achieve:

- o Accommodating the spectrum demands of future terrestrial mobile systems by upgrading the status of these services in the "UHF band" (470-862 MHz) and by identifying part of the "C band" (3.4 to 3.8 GHz) for these systems;
- o Ensuring the effective protection of Earth Exploration and other scientific services from harmful interference;
- o Satisfying the necessary spectrum requirements for digital radio broadcasting and for maritime services in the 4-10 MHz high frequency (HF) band;
- o Providing enough spectrum for aviation applications;
- o Preparing actions to support Community policies for the next WRC Conference due in 2011, notably concerning spectrum flexibility, climate change and the single European Sky.

[Link](#)

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.

A special thank you to those who have recommended and contributed articles for our newsletter. Please continue to forward new and interesting material to our attention: multipoint@rheintech.com. We respect the privacy of our customers and colleagues. If you would like to cancel your MultiPoint updates, please follow the instructions at the end of this email. The information in the MultiPoint update is subject to change without notice. [Learn More](#)

email: multipoint@rheintech.com
phone: 703-689-0368
web: <http://www.rheintech.com>

Last revised: July 24, 2007