MultiPoint
A Rhein Tech EMC Regulatory Update

June 2010

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 In-Situ Testing

QUESTION: One of our customers is a manufacturer of large industrial equipment which must be tested for 47 CFR 15 on the customer premises as it is too large to transport to the test laboratory. Can testing be performed at only one location on the customer's premises?

ANSWER: If equipment is too large to transport to a test laboratory, under §15.31 Measurement Standards, paragraph (d), the FCC allows in-situ testing at the site where the equipment is installed. However, a minimum of three separate locations must be tested. Below is paragraph (d) of the referenced FCC rules and regulations section.

"Field strength measurements shall be made, to the extent possible, on an open field site. Test sites other than open field sites may be employed if they are properly calibrated so that the measurement results correspond to what would be obtained from an open field site. In the case of equipment for which measurements can be performed only at the installation site, such as perimeter protection systems, carrier current systems, and systems employing a "leaky" coaxial cable as an antenna, measurements for verification or for obtaining a grant of equipment authorization shall be performed at a minimum of three installations that can be demonstrated to be representative of typical installation sites."

FCC Rules for Wireless Microphones

QUESTION: We manufacture wireless microphones. The FCC announced recently that wireless microphones are not permitted to operate on certain frequencies after June 12, 2010; is this correct?

ANSWER: The FCC announced recently that after June 12, 2010, in order to avoid interference to critical public safety-related communications and wireless consumer services, wireless microphones and similar devices ("wireless microphones") would be prohibited from operating in the 700 MHz band, specifically the frequencies between 698 MHz and 806 MHz, after June 12, 2010. Below is the link to the FCC's DA 10-1053 Enforcement Advisory.

- **Link to FCC Public Notice**

SAR Procedures for Body Worn Tracking Devices

QUESTION: What is the FCC's present regulation regarding a tracking device that uses cellular telephone technology and is tethered to a user's ankle? Does the FCC require Specific Absorption Rate (SAR) or Maximum Permissible Exposure (MPE) measurements for such a configuration? Does the FCC have regulations regarding cell phone exposure to areas of the body other than the head or trunk?

Our device operates under the following conditions:

- Tracking is achieved via GPS and cell tower multi-lateration.
- GSM and CDMA transmitters are attached to the waist and ankle.
- Average power is 25dBm to 30dBm.
- 8 timeslots typically; the mobile is only transmitting for 1/8 of the time and multi-slot mode is available.
- The duration of the communication to deliver the data packet is just a matter of a few seconds. New location data can be sent as frequently as once every 20 seconds. The most typical applications provide updated data once every 1-3 minutes.

ANSWER: SAR test procedures for ankle, wrist and pendant-worn transmitters are presently handled on a case-by-case basis by the FCC. The operating characteristics typically determine if SAR testing can be excluded, or would be required for head, body (trunk), extremity (wrist, ankle) conditions, or possibly a combination of conditions. For example, a wrist-worn cell phone with a speaker mode might require extremity SAR testing for the wrist, and head SAR testing while operating in speaker mode (talking and listening while the device is held close to the mouth). The conditions presented above indicate that the device may be eligible for SAR test exclusion. In order to make a determination, the FCC will require additional documentation such as RF conducted power data, tune-up data, external and internal photos, documented theory of operation with established specific operating conditions, duty cycle factor, etc. An FCC equipment authorization filing for a licensed transmitter that does not include a SAR evaluation must include a duty factor analysis instead.

FCC's Permit But Ask (PBA) Policy

QUESTION: We are a manufacturer of new technology wireless devices so our products tend to fall within the FCC's Permit But Ask (PBA) policy. Please provide answers to the following questions:

1. What is the usual processing time for non-urgent questions submitted to the FCC's Equipment Authorization System Administrative mailbox (EASADMIN@fcc.gov)?
2. How are inquiries that are considered urgent by the applicant, such as confidentiality or dismissals, handled by the FCC?
3. What is the typical turnaround for PBA's?

ANSWER:

1. The FCC's goal is 48 hours to respond to non-urgent questions but it can take longer if research is required. If no response is received within a week of submission, it is recommended that you send a follow-up message.
2. In the FCC's opinion, these are judgment calls, and decisions are made on a case-by-case basis. If an issue has become urgent or delayed, copy EASADMIN@fcc.gov and EASTECH@fcc.gov (Equipment Authorization System Technical) as appropriate to escalate the issue. As stated, the FCC will address each issue on a case-by-case basis.
3. The FCC has indicated that there is only one administrative category for PBA, confidentiality. Confidentiality issues are typically turned around within 2 days. All other topics are technical in nature. Currently, the typical turnaround for complex issues is over a week. The turnaround time is improved when the applicant provides all the relevant information for consideration and review with the initial submission.
4.

STANDARDS UPDATE

EU: NEW CENELEC STANDARDS RECENTLY RELEASED This is a shortened list of the CENELEC standards published during the past month:

- **HD 60364-4-444:2010** (5/21/2010) Low-voltage electrical installations -- Part 4-444: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances
- **EN 60335-2-52:2003/A11:2010** (5/28/2010) Household and similar electrical appliances - Safety -- Part 2-52: Particular requirements for oral hygiene appliances
- **EN 60335-2-27:2010** (6/04/2010) Household and similar electrical appliances - Safety -- Part 2-27: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation
- **EN 60601-1-11:2010** (6/04/2010) Medical electrical equipment -- Part 1-11: General requirements for basic safety and essential performance - Collateral standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment
- **EN 55016-2-3:2010** (6/04/2010) Specification for radio disturbance and immunity measuring apparatus and methods -- Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements
- **EN 55016-1-4:2010** (6/04/2010) Specification for radio disturbance and immunity measuring apparatus and methods -- Part 1-4: Radio disturbance and immunity measuring apparatus - Antennas and test sites for radiated disturbance measurements
- **EN 62209-2:2010** (6/04/2010) Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures -- Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)
- **EN 50383:2010** (6/11/2010) Basic standard for the calculation and measurement of electromagnetic field strength and SAR related to human exposure from radio base stations and fixed terminal stations for wireless telecommunication systems (110 MHz - 40 GHz)
- **EN 60335-2-109:2010** (6/18/2010) Household and similar electrical appliances - Safety -- Part 2-109: Particular requirements for UV radiation water treatment appliances

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 60335-2-109** (5/11/2010) Household and similar electrical appliances - Safety - Part 2-109: Particular requirements for UV radiation water treatment appliances
- **IEC 62153-4-1** (5/12/2010) Metallic communication cable test methods - Part 4-1: Electromagnetic compatibility (EMC) - Introduction to electromagnetic (EMC) screening measurements
- **IEC 60335-1** (5/12/2010) Household and similar electrical appliances - Safety - Part 1: General requirements
- **IEC 62599-2** (5/19/2010) Alarm systems - Part 2: Electromagnetic compatibility - Immunity requirements for components of fire and security alarm systems
- **IEC 60601-2-44 Corr.1** (5/19/2010) Corrigendum 1 - Medical electrical equipment - Part 2-44: Particular requirements for the basic safety and essential performance of X-ray equipment for computed tomography
- **IEC 61000-3-5 Corr.2** (5/19/2010) Corridendum 2 - Electromagnetic compatibility (EMC) - Part 3-5: Limits - Limitation of voltage fluctuations and flicker in low-voltage power supply systems for equipment with rated current greater than 75 A
- **CISPR 11** (5/19/2010) Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
- **IEC 61010-1** (6/10/2010) Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
- **IEC 61010-2-030** (6/10/2010) Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-030: Particular requirements for testing and measuring circuits
- **IEC 62479** (6/16/2010) Assessment of the compliance of low-power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)

See IEC for additional information.

EU: NEW ETSI STANDARDS RECENTLY RELEASED This is a shortened list of the new ETSI standards published during the past month:

- ETSI TR 102 749 V1.1.1 (May 2010) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Test Report Template for testing to EN 300 220-2 V2.3.1 (R&TTE)
- ETSI TS 102 658 V2.1.1 (June 2010) Electromagnetic compatibility and Radio spectrum Matters (ERM); Digital Private Mobile Radio (dPMR) using FDMA with a channel spacing of 6,25 kHz
- ETSI TR 102 799 V1.1.1 (June 2010) Electromagnetic compatibility and Radio spectrum Matters (ERM); Operation methods and principles for spectrum access systems for PMSE technologies and the guarantee of a high sound production quality on selected frequencies utilizing cognitive interference mitigation techniques
- ETSI EN 302 498-1 V1.1.1 (June 2010) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Technical characteristics for SRD equipment using Ultra WideBand technology (UWB); Object Discrimination and Characterization Applications for power tool devices operating in the frequency band from 2,2 GHz to 8,5 GHz; Part 1: Technical characteristics and test methods
- ETSI EN 302 498-2 V1.1.1 (June 2010) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Technical characteristics for SRD equipment using Ultra WideBand technology (UWB); Object Discrimination and Characterization Applications for power tool devices operating in the frequency band from 2,2 GHz to 8,5 GHz; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
- ETSI TR 102 649-2 V1.2.1 (June 2010) Electromagnetic compatibility and Radio spectrum Matters (ERM); Technical characteristics of Short Range Devices (SRD) and RFID in the UHF Band; System Reference Document for Radio Frequency Identification (RFID) and SRD equipment; Part 2: Additional spectrum requirements for UHF RFID, non-specific SRDs and specific SRDs
- ETSI EG 202 414 V1.2.1 (June 2010) Electromagnetic compatibility and Radio spectrum Matters (ERM); Guide to the demonstration of conformity for after market Electric/electronic Sub-Assemblies (ESAs) to the motor vehicle EMC Directive 2004/104/EC

See ETSI website for additional information.

FCC: ADDITIONAL 25 MHz OF SPECTRUM FOR MOBILE BROADBAND USE On May 20, 2010, the FCC adopted **WT Docket No. 07-293**, new rules allowing for an additional 25 megahertz of spectrum to be available for mobile broadband service in much of the United States, while protecting adjacent satellite radio and aeronautical mobile telemetry operations. The rules adopted amend the Wireless Communications Service (WCS) rules to immediately make 25 megahertz of spectrum available for mobile broadband services. The FCC also adopted enhanced build-out requirements for WCS licensees, to ensure that the promise of mobile broadband is realized. These requirements are designed to spur investment that will promote the deployment of innovative mobile broadband services across the country.

The newly adopted rules establish a regulatory framework for the co-existence of WCS and SDARS licensees in the 2.3 GHz frequency band in the following manner:

- Mobile and portable broadband devices: Mobile and portable station power levels are permitted up to 250 mW average equivalent isotropically radiated power (EIRP) per 5 megahertz in WCS Blocks A and B and in the portions of WCS Blocks C and D that are separated by 2.5 megahertz from the SDARS band edges; duty cycle limitations and automatic transmit power control (ATPC) will apply; out of-band emissions (OOBE) requirements on WCS mobile and portable devices are also relaxed.
- WCS base and fixed stations: Base and fixed stations in WCS Blocks A and B are permitted to operate with up to 2 kW average EIRP per 5 megahertz but stations in the C and D blocks remain limited to the 2 kW peak EIRP level currently specified in the Rules; WCS base and fixed stations' OOBE are also relaxed; a notification process with SDARS and coordination process with aeronautical mobile telemetry (AMT) users are also established.
- Performance requirements for WCS licensees: For mobile and point-to-multipoint services, WCS licensees must serve 40 percent of a license area's population within 42 months, and 75 percent within 72 months. For fixed point-to-point services, WCS licensees must construct and operate 15 point-to-point links per million persons in a license area within 42 months, and 30 links within 72 months, together with a minimum payload capacity to ensure that the spectrum is used intensively. Licensees will not be required to satisfy submarket construction requirements.
- WCS Coordination with Flight Testing Service. In those license areas where WCS licensees must coordinate with aeronautical mobile telemetry receive sites to serve a significant percentage of a market's total population, alternative requirements apply for mobile and point-to-multipoint services. Specifically, affected licensees must serve 25 (rather than 40) percent of the population within 42 months, and 50 (rather than 75) percent within 72 months.

- SDARS terrestrial repeaters: Permanent rules are established for the operation of SDARS terrestrial repeaters. Repeaters operating up to 12 kW average EIRP will be authorized under a blanket licensing regime. The FCC also denies petitions for reconsideration of the 1997 SDARS Order filed by the Consumer Electronics Manufacturing Association (CEMA) and the Cellular Phone Taskforce.

- **Link to WT Docket No. 07-293**

FCC: FCC AND FDA MEET TO DISCUSS WIRELESS HEALTHCARE DEVICE REGULATORY ISSUES
On June 15, 2010, the FCC and FDA announced in a Public Notice that they will jointly seek comments on regulatory issues arising from health care devices that employ radio technology or use commercial wireless communications networks. Comments are due on June 25, 2010. In addition to seeking written comments, the two agencies will hold a joint public meeting to discuss topics related to the convergence between communications and health care devices on July 26-27, 2010, and are accepting requests from parties that wish to make oral presentations at the Public Meeting. The meeting, titled "Enabling the Convergence of Communications and Medical Systems: Ways to Update Regulatory and Information Processes," is designed to gather input from the health care and communications industry regarding the convergence between sophisticated health care devices and systems that employ or rely on communications technology or networks. The agencies will use the information gathered to enhance coordination between the FDA and FCC. The agencies claim such coordination will simplify and expedite the introduction of new health care technology.

In recent years, health care devices and providers have made greater use of devices using communications capabilities. For example, certain devices such as automated insulin pumps and blood glucose monitors employ radio technology to wirelessly transmit critical data to health care providers. These devices are typically regulated by the FDA. Similarly, certain commercially available applications for smartphone and other communications devices transmit medical data over commercial broadband networks to allow physicians to monitor a patient's health. Such applications and devices come within the ambit of the FCC's regulatory authority. Some devices will be governed by both the FCC and the FDA. The agencies want to understand the issues and industry perspective to explore whether there are areas where each agency's jurisdiction can be clarified, or where regulatory approvals can be streamlined.

The Public Notice lays out a number of broad topics on which the agencies plan to focus: data integrity and reliability issues associated with the use of communications technology (including commercial networks); system security issues; use of licensed or unlicensed spectrum for health care devices; risk management; and the relationship between FDA and FCC regulatory approval processes and compliance

- **Public Notice Link**

IC: NEW ISSUE OF SRSP-303.65 On June 12, 2010, Industry Canada released Standard Radio System Plan 303.65 (SRSP-303.65), Issue 2: Technical Requirements for Wireless Broadband Services (WBS) in the Band 3650-3700 MHz, which sets out the minimum technical requirements for the efficient utilization of this band.

Issue 2 of SRSP-303.65 updates Section 9, which outlines a licensee's international coordination obligations for the sharing of the 3650-3700 MHz frequency band along the Canada-United States border regions. These technical rules form the basis of the frequency sharing arrangement concluded with the United States for this band; final adoption of this arrangement is subject to the treaty adoption processes of both Canada and the United States.

- **Link to SRSP-303.65, Issue 2**

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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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