



May 2006

## 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](#).

## FCC Transmitter Testing and Mask G

**QUESTION:** We heard that a new Mask G for Part 90 devices was introduced last year. Can you provide more details?

**ANSWER:** FCC Part 90.210 was amended by order (FCC 05-144) in Docket No. 03-264 and made effective December 19, 2005. The reason for this change to Mask G was to make the mask a modulation-independent mask that places no limitation on the spectral power density profile within the maximum authorized bandwidth.

The previous 90.210(g) read as follows: (g) Emission Mask G. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

1. On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 5 kHz, but no more than 10 kHz: At least  $83 \log(f_d/5)$  dB;
2. On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 10 kHz, but no more than 250 percent of the authorized bandwidth: At least  $116 \log(f_d/6.1)$  dB, or  $50 + 10 \log(P)$  dB, or 70 dB, whichever is the lesser attenuation;
3. On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least  $43 + 10 \log(P)$  dB.

Section 90.210(g) was amended by order by removing 90.210(g)(1) and re-designating paragraphs (2) and (3) as paragraphs (1) and (2).

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1. On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 10 kHz, but no more than 250 percent of the authorized bandwidth: At least  $116 \log(f_d/6.1)$  dB, or  $50 + 10 \log(P)$  dB, or 70 dB, whichever is the lesser attenuation;
2. On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least  $43 + 10 \log(P)$  dB.

## MURS Transceiver Labeling Requirements

**QUESTION:** Is a MURS transceiver subject to the following 15.19 labeling requirement? (a) (1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under part 73 of this chapter, land mobile operation under part 90, etc., shall bear the following statement in a conspicuous location on the device: *This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.*

**ANSWER:** Even though MURS was moved from Part 90 to Part 95, it is still a licensed service and subject to the labeling requirement. Additionally, per § 95.1317 *Grandfathered MURS Stations*, stations licensed under Part 90 of the FCC's Rules to operate on MURS frequencies as of November 13, 2000, are granted a license by rule that authorizes continued operations under the terms of such nullified Part 90 authorizations, including any rule waivers.

## FCC Permissive Changes and SAR testing

**QUESTION:** Our firm manufactures a body worn transmitter that has been FCC certified; SAR testing was performed and a SAR report submitted to the FCC. We have made some changes to the device and we need to know what the FCC Permissive Change requirements are relating to SAR testing.

**ANSWER:** The FCC requirements pertaining to modification of equipment is contained in 47 CFR 2.1043. Permissive change requirements are applicable to both EMC emissions and RF exposure, which include both Class I and Class II changes. The following items are generally applicable for determining if a Class II Permissive Change or Change of ID filing should address RF exposure issues:

1. If the original filing included SAR data, tests results for a Class II Permissive Change submission should include at least the test conditions corresponding to the highest SAR reported in previous filings when the changes are RF exposure related.
2. For Class I Permissive Change submission, applicants have to perform the applicable SAR tests to determine if the device qualifies for Class I or II Permissive Change status. If it is determined that Class I is applicable, submission of SAR results is not required. Applicants should keep the RF exposure test results for their own record.

## FCC Shielding Requirements for Modular Devices

**QUESTION:** Our company is manufacturing a modular device requiring FCC certification. Can our module be approved if one side of the printed circuit board is not shielded?

**ANSWER:** The shielding required for modular devices is interpreted to be over the entire component side of the printed circuit board. The other side of the board is the solder side. If the RF circuitry on the component side of the printed circuit board is shielded, it should satisfy the shielding requirement for modular approval.

## INTERNATIONAL UPDATE

### *EU: NEW CENELEC STANDARDS RELEASED THIS MONTH*

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

- **EN 50366:2003/A1:2006** Household and similar electrical appliances - Electromagnetic fields - Methods for evaluation and measurement
- **EN 60079-27:2006** Electrical apparatus for explosive gas atmospheres -- Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non- incendive concept (FNICO)
- **EN 60335-2-17:2002/A1:2006** Household and similar electrical appliances - Safety -- Part 2-17: Particular requirements for blankets, pads and similar flexible heating appliances
- **EN 60335-2-77:2006** Household and similar electrical appliances - Safety -- Part 2-77: Particular requirements for pedestrian controlled mains-operated lawnmowers
- **EN 61000-3-2:2006** Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase)
- **EN 61326-1:2006** Electrical equipment for measurement, control and laboratory use - EMC requirements -- Part 1: General requirements
- **EN 61326-2-1:2006** Electrical equipment for measurement, control and laboratory use - EMC requirements -- Part 2-1: Particular requirements - Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications
- **EN 61326-2-2:2006** Electrical equipment for measurement, control and laboratory use - EMC requirements -- Part 2-2: Particular requirements - Test configurations, operational conditions and performance criteria for portable test, measuring and monitoring equipment used in low-voltage distribution systems
- **EN 61326-2-6:2006** Electrical equipment for measurement, control and laboratory use - EMC requirements -- Part 2-6: Particular requirements - In vitro diagnostic (IVD) medical equipment

See [www.cenelec.org](http://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 60335-2-7 (May 12, 2006)** Household and similar electrical appliances - Safety - Part 2-7: Particular requirements for washing machines
- **IEC 61924 (May 11, 2006)** Maritime navigation and radiocommunication equipment and systems - Integrated navigation systems - Operational and performance requirements, methods of testing and required test results
- **IEC 62153-4-4 (May 9, 2006)** Metallic communication cable test methods - Part 4-4: Electromagnetic compatibility (EMC) - Shielded screening attenuation, test method for measuring of the screening attenuation as up to and above 3 GHz
- **IEC 61347-2-13 (May 5, 2006)** Lamp controlgear - Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
- **IEC 60335-2-80-am1 (May 5, 2006)** Amendment 1 - Household and similar electrical appliances - Safety - Part 2-80: Particular requirements for fans
- **IEC 61076-1 (April 27, 2006)** Connectors for electronic equipment - Product requirements - Part 1: Generic specification
- **IEC 62153-4-7 (April 21, 2006)** Metallic communication cable test methods - Part 4-7: Electromagnetic compatibility (EMC) - Test method for measuring the transfer impedance and the screening - or the coupling attenuation - Tube in tube method
- **IEC 60335-2-14 (April 21, 2006)** Household and similar electrical appliances - Safety - Part 2-14: Particular requirements for kitchen machines
- **IEC 60745-1 (April 18, 2006)** Hand- held motor- operated electric tools - Safety - Part 1: General requirements

See [IEC](http://www.iec.ch) 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 TR 102 491 V1.2.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); TETRA Enhanced Data Service (TEDS); System reference document
- [ETSI TS 102 230 V4.8.0 \(May 2006\)](#) Smart cards; UICC-Terminal interface; Physical, electrical and logical test specification (Release 4)
- [ETSI EN 300 392-12-3 V1.3.1 \(April 2006\)](#) Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 12: Supplementary services stage 3; Sub-part 3: Talking Party Identification (TPI)
- [ETSI TR 102 398 V1.1.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); Digital Mobile Radio (DMR) General System Design

## CANADA: SRSP-512 AND AMENDMENT OF RSS-119

On April 22, 2006, Industry Canada introduced a new Standard Radio System Plan, SRSP-512, which states the technical requirements for land mobile and fixed systems operating in the band 220-222 MHz. Industry Canada is also amending Radio Standards Specification 119, which sets out requirements for radio transmitters and receivers for the land mobile and fixed services in bands allocated within the 27.41 MHz to 960 MHz range. These documents are as follows:

[Standard Radio System Plan 512](#), Issue 1, Technical Requirements for Land Mobile and Fixed Radio Services Operating in the Band 220-222 MHz. SRSP provides information on the minimum technical requirements for land mobile and fixed radio services in the band 220-222 MHz. Radio Standards Specification 119, Issue 7, Land Mobile and Fixed Radio Transmitters and Receivers Operating in the Frequency Range 27.41-960 MHz.

[RSS- 119, Issue 7](#) was updated to 1) include requirements for land mobile and fixed equipment operating in the 220-222 MHz band; 2) revise the emission mask for the 800/900 MHz range to accommodate new technologies; 3) revise the spurious emission limits (using the radiated measurement method) for receivers to comply with the limits found in RSS-Gen; and 4) remove Annex A, Data Modem Certification, as data modems have been reclassified as Category II equipment, subject to the requirements of RSS-310, Low-power License-exempt Radiocommunication Devices (All Frequency Bands): Category II Equipment.

## CANADA: RELEASE OF STANDARD RADIO SYSTEM PLAN 307.1

On May 13, 2006, Industry Canada released [Standard Radio System Plan 307.1](#) -Technical Requirements for Fixed Line of- Sight Radio Systems Operating in the Band 7125-772 MHz (SRSP-307.1, Issue 5). SRSP states the minimum technical requirements for the efficient use of the frequency band 7125 7725 MHz by low, medium, and high-capacity (LC, MC and HC) digital point-to-point radio systems in the fixed service.

## 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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