



June 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 Testing of GSM Licensed Modules

**QUESTION:** Our firm would like to test our GSM licensed module and apply for FCC modular approval. Please explain the FCC requirements and implications. Our understanding is that we must test to FCC Rule Part 22, Part 24 and Part 15. Is this correct?

**ANSWER:** A GSM licensed module can be FCC approved under the following conditions, with few reservations:

The FCC allows modular approval for RF category "mobile" devices but you must carefully define the antennas used with the device and test it in a "stand-alone" configuration. The rules for licensed transmitter modules are not as clear as those for unlicensed FCC Part 15 modules. There are some administrative issues that TCBs must handle on a case-by-case basis.

The FCC does not allow modular approval for RF category "portable" devices. The FCC will simply not allow any RF category "portable" configuration to have a modular approval if SAR testing is involved. The reason is because the FCC has seen no consistency of SAR results with respect to modules. There are many factors affecting SAR testing; therefore no "portable" licensed modular approvals are allowed, unless the RF power is under 5 mW.

Below is the FCC's licensed modular approval policy:

Licensed transmitters may be approved as modules for installation into the final devices provided the following criteria are met:

- The final device is designed for mobile or fixed operation (portable devices are not permitted - Reference TCB Exclusion List (17 July 2002) II (g)).
- The maximum antenna gain to allow compliance with RF exposure requirements is listed on the Grant of Certification for the module.
- The licensed module must have an FCC ID label on the module itself. That FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily removed. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: xxxyyyzzz."
- The Grant should include the following words in the device description or grant notes: "modular transmitter" or "transmitter module."

## FCC Testing Requirements for FM Transmitters (vehicular)

**QUESTION:** Our company manufactures an FM band transmitter for vehicular installation. What are the FCC's testing requirements for our transmitter?

**ANSWER:** FM transmitters for vehicular use must meet FCC Part 15.239 and Part 15.209. Furthermore, testing is dependent on the type of antenna the transmitter uses. If the transmitter uses the wire harness for transmitting, it would be impossible to define the antenna for open field testing. In such instance, the following test methodology applies:

- FCC Part 15.31(d) specifies that radiated emission measurements should be performed in at least three typical installations.
- The Grantee is responsible for a design that is compliant in all types of vehicle that the device is used in.

Therefore, measurements of the referenced device must be made with the transmitter installed in at least three different vehicles: a large, midsize and compact vehicle chosen based on models in the targeted market. Compliance with the limits specified in Section 15.239 must be demonstrated with the antenna mast placed at least in 8 different radials around the vehicle, as specified in ANSI C63.4, and should be placed at least 3 meters from the test vehicles. Further guidance in ANSI C63.4 to maximize radiated emissions applies.

If the FM transmitter uses a defined antenna, as in energizing incoming coax shield of satellite antenna to the receivers to radiate, then the following testing should be performed in order to determine that the spurious emissions of the FCC Part 15.239 device are verified to the FCC Part 15.209 limits:

- Perform a pre-scan of the device on an OATS or suitable equivalent, with the maximum length "antenna" (the conductor carrying the intentionally generated FM signal) to determine the worse case emissions.
- A criteria to determine the "worse-case" condition should be established i.e., 10 dB under the limit.
- Install the unit in the three vehicles as described above and verify the levels using the "in situ" procedure as specified in ANSI 63.4. Furthermore, the general conditions of operations for intentional radiators in FCC Part 15.5 a, b, c, and d applies.

## U-NII Device Transition

**QUESTION:** The FCC's ET Docket No. 03- 122 extends the transition period for U-NII devices operating in the 5.250 - 5.350 GHz band. U-NII devices operating under the previous rules must not be imported or marketed after July 20, 2007. However, the docket states that users, who obtained equipment prior to that date, could operate their units indefinitely. Does the restriction on importation and marketing after the aforementioned date include warranty parts, field replacement parts, and for users whose U-NII devices may become damaged/non- functional and the users wish to replace the original device under warranty?

**ANSWER:** The FCC states that after the final transition date, all devices imported or marketed must comply with the rules, even replacement devices. Furthermore, all filings need to comply with the FCC's rules. Repairing a device within the US, which does not require a new filing, is allowed. If the repair requires a new filing, or if the U-NII device is brought outside of the US and imported back in after repair, it is considered imported and is not allowed.

## FCC Labeling on Battery Covers

**QUESTION:** Our company manufactures a ruggedized hand held computer that is designed to be dust tight, chemical resistant, etc. The battery cover is hinged in such a way that it only opens but is not removable. Part of the hand holding strap depends on connections between the battery cover and chassis being in place. In this situation, given the non-removable nature of the cover and ruggedized design, can the FCC label be placed on the hinged battery cover?

**ANSWER:** The FCC has stated that placing the labels on removable battery covers is not allowed. At a May 2003 TCB training session, this issue was addressed for licensed devices because labeling is found on removable battery covers. However, the FCC's position is that as long as the label is displayed in such a way that it can be seen from the outside, without having to open the battery cover, then it is allowed.

## INTERNATIONAL UPDATE

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

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

- **EN 60076-5:2006** Power transformers -- Part 5: Ability to withstand short-circuit
- **EN 60770-3:2006** Transmitters for use in industrial-process control systems -- Part 3: Methods for performance evaluation of intelligent transmitters
- **EN 62389:2006** Methods of measurement for DVD players
- **EN 60601-1-8:2004 / A1:2006** Medical electrical equipment -- Part 1-8: General requirements for safety - Collateral standard: General requirements, tests and guidance for alarm systems in medical electrical equipment and medical electrical systems
- **EN 62287-1:2006** Maritime navigation and radiocommunication equipment and systems - Class B shipborne equipment of the automatic identification system (AIS) -- Part 1: Carrier-sense time division multiple access (CSTDMA) techniques
- **EN 60598-2-12:2006** Luminaires -- Part 2-12: Particular requirements - Mains socket-outlet mounted nightlights
- **EN 60065:2002 / A1:2006** Audio, video and similar electronic apparatus - Safety requirements
- **EN 60601-1-2:2001 / A1:2006** Medical electrical equipment -- Part 1-2: General requirements for safety - Collateral standard: Electromagnetic compatibility - Requirements and tests
- **EN 61000-4-3:2006** Electromagnetic compatibility (EMC) -- Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
- **EN 62132-4:2006** Integrated circuits - Measurement of electromagnetic immunity 150 kHz to 1 GHz -- Part 4: Direct RF power injection method

See [www.cenelec.org](http://www.cenelec.org) for additional information.

### **EUROPE: RoHS ENFORCEMENT GUIDANCE DOCUMENT**

In May 2006, the EU Commission published the "RoHS Enforcement Guidance Document," developed by the EU RoHS enforcement authority's informal network.

The purpose of the document is to assist Member States with national enforcement of the RoHS Directive and to provide clarity to industry on how producers may demonstrate compliance requirements.

[RoHS Enforcement Guidance Document](#)

### **EU: NEW IEC STANDARDS RECENTLY RELEASED**

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

- **ISO / IEC 18047-2 (June 1, 2006)** Information technology - Radio frequency identification device conformance test methods - Part 2: Test methods for air interface communications below 135 kHz
- **ISO / IEC 18047-6 (June 1, 2006)** Information technology - Radio frequency identification device conformance test methods - Part 6: Test methods for air interface communications at 860 MHz to 960 MHz
- **IEC 60884-1-am1 (May 29, 2006)** Plugs and socket-outlets for household and similar purposes - Part 1: General requirements
- **IEC 60335-2-40 (May 29, 2006)** Household and similar electrical appliances - Safety - Part 2-40: Particular requirements for electrical heat pumps, air- conditioners and dehumidifiers
- **IEC 62271-SER (May 24, 2006)** High-voltage switchgear and controlgear - ALL PARTS
- **IEC 60076-SER (May 24, 2006)** Power transformers - ALL PARTS
- **IEC 61010-2-020 (May 24, 2006)** Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-020: Particular requirements for laboratory centrifuges
- **IEC 61000-4-6 (May 22, 2006)** Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields

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 TR 102 398 V1.1.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); Digital Mobile Radio (DMR) General System Design
- [ETSI TR 102 459 V1.1.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); TETRA Air-Ground-Air Services (AGA); Systems reference document
- [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 EN 300 162-1 V1.4.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); Radiotelephone transmitters and receivers for the maritime mobile service operating in VHF bands; Part 1: Technical characteristics and methods of measurement
- [ETSI EN 300 396-4 V1.3.1 \(May 2006\)](#) Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 4: Type 1 repeater air interface
- [ETSI EN 301 489-11 V1.3.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 11: Specific conditions for terrestrial sound broadcasting service transmitters
- [ETSI TR 102 495-2 V1.1.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Technical characteristics for SRD equipment using Ultra Wide Band Sensor technology (UWB); System Reference Document Part 2: Object discrimination and characterization applications operating in the frequency band 2,2 GHz to 8 GHz
- [ETSI EN 302 288-1 V1.2.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Short range radar equipment operating in the 24 GHz range; Part 1: Technical requirements and methods of measurement
- [ETSI EN 302 288-2 V1.2.1 \(May 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Short range radar equipment operating in the 24 GHz range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- [ETSI TR 102 453-1 V1.1.1 \(June 2006\)](#) Electromagnetic compatibility and Radio spectrum Matters (ERM); Converged Fixed-Nomadic Broadband Wireless Access (BWA); Part 1: Frequencies above 3,4 GHz - System reference document

See [ETSI](#) for additional information.

### **CANADA: NEW ISSUE OF ICES-001 RELEASED**

On June 3, 2006, Industry Canada released Issue 4 of ICES-001, **Interference-Causing Equipment Standard - 001 (ICES-001): Industrial, Scientific and Medical (ISM) Radio Frequency Radiators**.

Issue 4 sets out mandatory requirements for limits and methods of measurement of radio frequency noise emissions from ISM equipment. This newest issue was prepared in response to the adoption by the Canadian Standards Association (CSA) of CEI/IEC CISPR 11: 2003 (fourth edition, 2003-03) as CSA Standard CAN/CSA-CEI/IEC CISPR 11-4. This CSA standard is incorporated by reference in ICES-001, Issue 4 for prescribing limits and methods of measurement of radio noise from ISM equipment.

See [link](#) for complete copy of the publication

### US: SPECTRUM SHARING INNOVATION TEST BED

On June 8, 2006, the FCC released ET Docket No. 06- 89, seeking public comment on the creation of a spectrum sharing innovation test bed. The FCC and the National Telecommunications and Information Administration (NTIA) seek to evaluate innovative methods for spectrum sharing among users to enable more intensive use of the finite radio spectrum. In order to accomplish this task, the FCC and NTIA plan to set up a test bed where both federal and non-federal users could undertake one or more studies and experiments to test these ideas.

As part of the test bed, the FCC and NTIA will each identify approximately 10 MHz of spectrum. The test bed will build on the successful sharing arrangements between federal and non-federal users at 5 GHz and in the 70, 80, and 90 GHz bands and will drive future innovation and the expansion of sharing to benefit government and commercial users.

In order to assist the FCC in developing recommendations, interested parties are requested to submit comments and information on the test bed program to study the feasibility of increasing the efficient use of spectrum that is shared between federal and non-federal users. The FCC seeks comment to some specific questions - please see link to detailed [ET Docket No. 06-89](#). Interested parties should file comments before July 10, 2006.

## 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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