



October 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](#).

Recent FCC Annual Report

QUESTION: As a manufacturer of wireless devices, we are interested in the TCB council's opinion of the FCC's recent "Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless including Commercial Mobile Services Notice of Inquiry FCC 09-66." Can you please provide this information?

ANSWER: The TCB council recently filed its comments with the FCC's Electronic Comment Filing System (ECFS) regarding Notice of Inquiry (NOI) FCC 09-66. The FCC in its NOI requested comments on the following points below:

- Relaxed approvals for certain device categories
- Improving time to market and efficiency

The TCB Council comments, as well as all other electronically filed comments, can be accessed at: <http://www.fcc.gov/cgb/ecfs/> or the search page http://fjallfoss.fcc.gov/prod/ecfs/comsrch_v2.cgi and enter 09-66 in the proceeding field.

FCC Chamber Requirements for Testing

QUESTION: We would like to know whether it is acceptable to perform radiated spurious emissions using antenna substitution method in an anechoic chamber. Furthermore, can pre-calibrated field information used to calculate Effective Radiated Emission (ERP)/Effective Isotropic Radiated Power (EIRP) values in substitution measurements?

ANSWER: The FCC does not make any differentiation between semi-anechoic and fully anechoic chambers. The FCC merely states that ANY anechoic chamber that meets the alternative test site requirements in C63.4 (volumetric NSA) is acceptable for making measurements. This is and always has been the FCC's policy on test sites and their requirements. An anechoic chamber that meets C63.4 clause 5 is considered a standard test site for TIA603C test procedures purposes. An anechoic chamber is accepted as an alternative ANSI C63.4, clause 5 test site. It is acceptable for any measurements just like any other test site that complies with ANSI C63.4.

The FCC has not officially accepted pre-calibrated field for Effective Radiated Emission (ERP) /Effective Isotropic Radiated Power (EIRP) values in substitution measurements. Therefore, it cannot be used.

FCC Policy on Band Configuration by End User

QUESTION: Our firm designs and manufactures 802.11 b/g devices and UNII devices. We would like to know if a Part 15 transmitter, such as our devices, allow users or professional installers to set the country code to ensure compliance if the users manual contains the following statement:

"WARNING: Select only the country in which you are using the device. Any other selection will make the operation of this device illegal."

ANSWER: An 802.11 b/g must be limited to operation on permissible Part 15 frequencies and such devices cannot have the ability to be configured by end users or professional installers to operate outside the authorized bands. Selecting country codes for different regulatory domains is not permitted. If the device is certified for professional installation, installers may be allowed access to configuration parameters when on site (remote access is not permitted); and only the configuration parameters identified in the equipment authorization may be configured on site. Frequency selection using country codes is not permitted.

Any device meeting the definition of a client as specified in Section 15.202 may have the ability to operate on other regulatory domain frequencies if it is under control of (automatically associated with) a certified master device. In this case, the "WARNING" statement mentioned above would not serve any purpose since frequency selection, power or grant conditions would be automatic, and regulatory domain selection would not be permitted.

Many UNII devices, referred to by the WiFi industry as "client devices", may not meet the definition of Section 15.202 of the FCC's rules and regulations as a client, and must be limited to operating as master devices on US frequencies, and within the grant conditions. To qualify as a Section 15.202 client, a device cannot initiate, or be configured to initiate, any transmission for any reason on non-US frequencies, or on frequencies not authorized for use. This includes probes, beacons, and ad hoc modes transmissions.

Only if all features and functions that utilize initiating transmissions are within the frequencies as granted, can the device be authorized as a Section 15.202 client device. These devices can then automatically associate and operate on non-US frequencies when outside of the US, under the control of a foreign master device authorized on other regulatory domain frequencies.

FCC's Licensed Modular Transmitter Policy

QUESTION: Can you review the new FCC's Licensed Modular Transmitters policy?

ANSWER: 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 is not permitted - reference [TCB Exclusion List - 3/12/2009](#).)
- 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 a 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: xxxyyyyzzz."

FCC Rules for Combo Radios

QUESTION: What is a combination radio (combo device) and what combinations of radio services can be included in one radio?

ANSWER: The FCC defines any device that applies for an equipment authorization to operate under multiple radio services as a combination radio. The Wireless Telecommunications Bureau (WTB) approves combinations. Part 15 devices are generally not included in this definition unless specific combinations are prohibited, such as Part 15 and Part 101 at the 92-95 GHz band. The FCC maintains a list as a guide for combinations that have been either approved or rejected as of 11/09/2007. The combination Radio Guide as of 11/09/2007 is below:

- FRS/GMRS combo - approved
- Part 95G/Part 22/24/90 combos - approved
- Part 80 VHF (156 - 163 MHz)/FRS combo - approved
- Part 80 UHF (456 - 468 MHz)/ FRS, GMRS, or FRS/GMRS combos - prohibited
- MURS (Part 95J) combos - prohibited
- Amateur (Part 97) combos - prohibited
- Part 15 /Part 101 at 92-95 GHz - prohibited

All combo devices must meet RF exposure requirements and all other FCC Rules. In addition there may be additional requirements or restrictions enforced by Wireless Telecommunication Bureau (WTB).

In early October, the FCC released a new [KDB149672 D01 Transmitter Certified Multiple Rule Parts v01 10-6-09](#) updating the aforementioned list and providing additional guidance for transmitting device combinations as follows:

- prohibited by rule
- including restrictions, additional requirements and specific certification guidance for transmitters
- permitted with additional requirements beyond the individual rule parts
- subject to a special "Permit But Ask" procedure for FCC approval prior to Certification
- subject to additional approvals from other government agencies

Questions about specific combinations may be submitted to http://www.fcc.gov/lab_help using the "Submit an Inquiry" link to access the form to submit a question.

INTERNATIONAL UPDATE

EU: NEW CENELEC STANDARDS RECENTLY RELEASED

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

- **EN 60745-2-9:2009** (09/30/2009) Hand-held motor-operated electric tools - Safety -- Part 2-9: Particular requirements for tappers
- **EN 60745-2-18:2009** (09/30/2009) Hand-held motor-operated electric tools - Safety -- Part 2-18: Particular requirements for strapping tools
- **EN 60745-2-8:2009** (09/30/2009) Hand-held motor-operated electric tools - Safety -- Part 2-8: Particular requirements for shears and nibblers
- **EN 50366:2003 / IS1:2009** (10/02/2009) Household and similar electrical appliances - Electromagnetic fields - Methods for evaluation and measurement
- **EN 61029-2-9:2009** (10/21/2009) Safety of transportable motor-operated electric tools -- Part 2-9: Particular requirements for mitre saws

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 61000-3-5 Corr.1** (09/23/2009) Corrigendum 1 - 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
- **ISO/IEC 18000-2** (9/30/2009) Information technology -- Radio frequency identification for item management -- Part 2: Parameters for air interface communications below 135 kHz
- **IEC 61347-2-9** (10/13/2009) Lamp controlgear - Part 2-9: Particular requirements for ballasts for discharge lamps (excluding fluorescent lamps)
- **ISO/IEC 20000-3** (10/14/2009) Information technology - Service management - Part 3: Guidance on scope definition and applicability of ISO/IEC 20000-1
- **IEC 60335-2-17** (10/14/2009) Household and similar electrical appliances - Safety - Part 2-17: Particular requirements for blankets, pads, clothing and similar flexible heating appliances
- **IEC 61000-4-5 Corr.1** (10/20/2009) Corrigendum 1 - Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test
- **IEC 80601-2-35** (10/20/2009) Medical electrical equipment - Part 2-35: Particular requirements for the basic safety and essential performance of heating devices using blankets, pads and mattresses and intended for heating in medical use

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 TS 102 490 V1.5.1](#) (September 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Peer-to-Peer Digital Private Mobile Radio using FDMA with a channel spacing of 6,25 kHz with e.r.p. of up to 500 mW
- [ETSI EG 202 730 V1.1.1](#) (September 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Code of Practice in respect of the control, use and application of Ground Probing Radar (GPR) and Wall Probing Radar (WPR) systems and equipment
- [ETSI TS 102 658 V1.2.1](#) (September 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Digital Private Mobile Radio using FDMA with a channel spacing of 6,25kHz
- [ETSI EN 301 839-1 V1.3.1](#) (October 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Ultra Low Power Active Medical Implants (ULP-AMI) and Peripherals (ULP-AMI-P) operating in the frequency range 402 MHz to 405 MHz; Part 1: Technical characteristics and test methods
- [ETSI EN 301 839-2 V1.3.1](#) (October 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Ultra Low Power Active Medical Implants (ULP-AMI) and Peripherals (ULP-AMI-P) operating in the frequency range 402 MHz to 405 MHz; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
- [ETSI TS 102 726-1 V1.1.1](#) (October 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Conformance testing for Mode 1 of the digital Private Mobile Radio (dPMR) Part 1: Protocol Conformance Implementation Statement (PICS) proforma
- [ETSI TS 102 726-2 V1.1.1](#) (October 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Conformance testing for Mode 1 of the digital Private Mobile Radio (dPMR); Part 2: Test Suite Structure and Test Purposes (TSS&TP) specification
- [ETSI TS 102 726-3 V1.1.1](#) (October 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Conformance testing for Mode 1 of the digital Private Mobile Radio (dPMR); Part 3: Interoperability Test Suite Structure and Test Purposes (TSS&TP) specification
- [ETSI TS 102 795 V1.1.1](#) (October 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Testing for Modes 1, 2 and 3 of the Digital Private Mobile Radio (dPMR); Testing for Modes 1, 2 and 3 of the Digital Private Mobile Radio (dPMR); Requirements catalogue

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

US: DFS INTERIM PLANS On 10/5/2009, the FCC published interim plans regarding the certification of DFS (Dynamic Frequency Selection) master devices. Several months ago, the FCC announced that NTIA was investigating interference with UNII Master Devices and the FCC would halt the issuance of new Certifications of Master devices until further notice.

The recently released interim plans specify the FCC will allow certification of wireless master devices with radar detection function and with DFS capability, if they meet the following conditions:

- Devices are intended for indoor operations only;
- Devices will not permit operations on channels which overlap the 5600 - 5650 MHz band;
- Devices meet all the other requirements specified in Section 15.407 and no configuration controls are provided to change the frequency of operations outside the grant of certification for US operation.

[Link](#)

FCC: SPECTRUM CRISIS In early October 2009, FCC Chairman Julius Genachowski spoke at the International CTIA Wireless I.T. & Entertainment conference in San Diego. Chairman Genachowski described an impending 'spectrum crisis' and outlined a number of initiatives the FCC is working on to ensure the spectrum can keep pace with the exploding demand for mobile broadband. Chairman Genachowski noted that wireless demand has increased thirty-fold in the same timeframe that the FCC has allocated only three times the spectrum bandwidth.

One of the proposals detailed is to offload some of the bandwidth demand to wireless networks when available. Chairman Genachowski indicated that redistributing demand over wireless networks could cut wireless spectrum usage by consumers as much as 40%. That initiative would require some additional technologies or enhanced mobile devices capable of dynamically switching between cellular and WIFI based on availability. Chairman Genachowski also stated that the FCC is going to be more aggressive about reallocating unused or obsolete spectrum ranges like the recent switch of the 700MHz television spectrum for use by mobile providers. Additionally, Chairman Genachowski proposed to explore more strategic placement of tower sites for 4G networks and to streamline the process of getting tower sites approved. Other subjects addressed were recent FCC actions related to the wireless industry and the net neutrality debate. [Link](#)

EU: WIRELESS BROADBAND ON GSM FREQUENCIES As of 10/20/2009, a path has been cleared for a new generation of mobile services in Europe with the publication in the EU's Official Journal of new measures that allow 3G phones to use GSM frequencies. This follows the European Parliament and Council of Ministers' agreement, in July (IP/09/1192), to modernize European legislation - the GSM Directive - on the use of the radio spectrum needed for mobile services. The new EU measures will foster stronger competition on Europe's telecoms market and make it easier for operators to provide faster, pan-European services such as mobile internet alongside today's GSM services. [Link](#)

CANADA: CONSULTATION PAPER 698-806 MHz BAND On 9/12/2009, Industry Canada released DGTP-011- 09, a Consultation Paper on Low-power Licensed Radiocommunication Devices, Including Wireless Microphones, in the Band 698-806 MHz. Currently, the operation of low-power devices in the band 698-806 MHz is subject to licensing on a no protection, no- interference basis in accordance with Client Procedures Circular CPC-2-1-11, Low power Licensed Radiocommunication Devices, and Radio Standard Specification RSS-123, Low power Licensed Radiocommunication Devices.

The band has been allocated to the broadcasting service for some time, and frequencies for low-power licensed radiocommunication devices have been selected to ensure that they do not interfere with the reception of broadcasting signals that are available in the immediate area.

In 2004, the band 746-806 MHz was allocated to the mobile service on a co-primary basis with the broadcasting service (see SP-746 MHz, Mobile Service Allocation Decision and Designation of Spectrum for Public Safety in the Frequency Band 746- 806 MHz). Furthermore, the bands 764-776 MHz and 794-806 MHz were designated for public safety in spectrum utilization policies SP-746 MHz, and SP 768 MHz, Narrowband and Wideband Public Safety Radiocommunication Systems in the Bands 768-776 MHz and 798-806 MHz.

Given the nature of public safety operation and its stringent requirements for protection from harmful interference, as well as the potential for future operation of mobile service in the band 698-806 MHz, Industry Canada is seeking public comments on the continued use of the band by low-power licensed radiocommunication devices in this band. [Link](#)



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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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