

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](#).

WLAN Interference with Radar

QUESTION: We are a manufacturer of WLAN devices operating in the 5 GHz range. We recently heard there could be an issue with avoiding European radar at this frequency. Can you elaborate on this topic?

ANSWER: Dynamic Frequency Selection (DFS) has been under scrutiny in a number of countries recently. Canada temporarily closed its 5600 to 5650 MHz band to Radio Local Area Networks (RLAN) devices. Japan has tightened its test requirements and Australia is still working on its own test requirements. The EU announced planned changes after it found some WLAN devices with DFS capability are unable to avoid European weather radar in the range of 5600 MHz to 5650 MHz, despite complying with DFS test requirements.

The EU's Telecommunications Conformity Assessment and Market Surveillance Committee (TCAM) responded to weather radar complaints with planned pulse-width detection threshold in an effort to address the shortcomings of EN 301 893 version 1.4.1. The following changes are:

- 1us changing to 0.8us and then 0.5us.
- Detection of staggered Pulse Repetition Frequency (PRF) radars with 3 PRF value.
- Closing the 5600-5650 MHz band to RLAN devices in the interim.

Furthermore, TCAM proposes the following deadlines:

1. Products placed in the EU market between now and March 2008, shall as a minimum, be compliant to EN301 893 version 1.2.3.
2. The Date of Withdrawal (DOW) will be March 31, 2008 for EN 301 893 version 1.2.3.
3. Products tested against the aforementioned version of the standard cannot be placed in the EU market after March 31, 2008.
4. Products to be placed in the market after March 31 must be tested with EN 301 893 version 1.3.1 or 1.4.1.
5. From April 1, 2008 to July 1, 2008, products to be placed in the market must be tested with EN 301 893 version 1.3.1 or 1.4.1.
6. Between July 1 and March 31, 2009, products placed on the market during this period shall be compliant with EN 301 893 version 1.3.1 or version 1.4.1. Additionally, when operating in the 5600 to 5650 MHz band, they shall be capable of detecting staggered PRF with a minimum of 3 PRF values.
7. From April 1, 2009 to June 30, 2010 products placed in the market shall comply with EN 301 893

version 1.5.1. This standard is yet to be developed by ETSI. Version 1.5.1 will be based on EN 301 893 version 1.4.1, additionally it will have the following:

- a. WLAN devices with DFS capability shall detect pulse width down to 0.8us across the bands from 5250 to 5350 MHz and from 5470 to 5725 MHz.
- b. Provide solution for weather radar noise calibration in the 5600-5650 MHz band by using the 10 minute Channel Availability Check (CAC) or equivalent. Using CAC ensures that when choosing a new channel to operate, a WLAN device does not occupy the channel when one or more radar is occupying the channel.
- c. After July 1, 2010 products placed in the market shall comply with EN 301 893, version 1.6.1. This standard is yet to be developed by ETSI. Version 1.6.1 will be based on EN 301 893 version 1.5.1 but in addition it will have the requirement below.
- d. WLAN devices with DFS capability shall detect pulse width down to 0.5us across the bands from 5250 to 5350 MHz and from 5470 to 5725 MHz.

We anticipate the new DFS parameters will be announced in the next version of the Official Journal. Until the new test methods are in place, those seeking a Notified Body opinion would most likely be required to demonstrate that they have addressed this issue, through additional DFS testing or avoidance of the frequency band of concern by their Notified Body.

TCB Audit Surveillance

QUESTION: We were informed that the FCC recently increased TCB audit surveillance requirements from 2% to 5% starting Jan 1, 2008. Is this correct and can you explain?

ANSWER: This is correct. The FCC now requires that TCB audits consist of at least 5% of the total number of products certified, under Scope A - Unlicensed Radio Frequency Devices and Scope B - Licensed Radio Service Equipment, for a given year.

A product type is considered to be the equipment covered under a single FCC ID number. Surveillance shall be performed on a proportional basis based on the number of products authorized per TCB scopes A and B. The number of products audited shall also represent the same proportion of FCC recognized accredited test laboratory reports versus non-recognized test laboratory reports as the total number of products certified for a given year. The total number of product types audited by the TCB for TCB Product Scope C - Telephone Terminal Equipment, shall consist of at least 2% of the total number of products certified under Scope C by the TCB for a given year.

The TCB shall establish their surveillance year (e.g., January 1 to December 31, or July 1 to June 30, etc.) The last completed surveillance year is an appropriate surveillance period for review during an ISO/IEC Guide 65 accreditation assessment. If the TCB has certified products subject to RF Radiation Exposure requirements, then such products shall be included in the total number of samples audited. At least one percent of the products subject to SAR measurements and certified by the TCB for the given year shall be audited. A sample tested for the one percent SAR surveillance can also count as satisfying surveillance under the five percent EMC surveillance requirement if the TCB also tests the EMC parameters. For further information, please click on this link: [Market Surveillance Policy](#)

FCC Form 731 Signatory and Confidentiality

QUESTION: Who is authorized by the FCC to sign a Form 731 Application for Equipment Authorization and who is authorized to request confidentiality for application exhibits?

ANSWER: On December 13, 2007, The FCC published a document detailing the authorization process. The document explains that the "authorized" individual, when referred to in relation to both an FCC and TCB Form 731 Application for Equipment Authorization, is identified as either the applicant / grantee contact of record in the FCC's Grantee Code database or the agent authorized by the applicant / grantee. Only an authorized individual may "sign" the Form 731. Additionally, only an authorized individual may request confidentiality - i.e. the confidentiality letter must be signed by an authorized individual and uploaded into the Cover Letters exhibit folder on the FCC's application website. For the complete FCC document, please click on the following link: [852134 D01 Authorized Policy Form 731 v01](#)

Class II Permissive Changes

QUESTION: We have a client that wishes to proceed with a Class II permissive change (C2PC) with the following caveat: the power measurements and spurious emissions measurements taken as part of this permissive change were at the highest power settings allowed by the factory programmed EEPROM. The power measurement is lower than the original filing by more than 0.5 dBm. This ensures that the product would comply with the requirements independent of which antennas are used, that is - those that were part of the original filing and those included as part of this permissive change. Please clarify if the FCC would allow this.

ANSWER: The FCC's "re- measurement" tolerance policy of +/- 0.5 dB conducted and +/-3 dB radiated for Class II permissive changes (C2PC) has been superseded by Knowledge Data Base (KDB) 291699 which also applies to Class II permissive changes (although not specifically stated). The KDB states the following:

Grantees must coordinate with test labs to ensure all samples for EMC, HAC and SAR are tested at maximum output conditions as required by the applicable test procedures. The output power measured for EMC and SAR may vary due to differences in test procedures and requirements. The measured values may not be directly comparable unless the same identical procedures are applied; for example, peak, average, bandwidth, modulation, operating modes, data rates, and frame/bit patterns etc. It is the grantee's responsibility to ensure all test samples are operating within tune-up requirements (accepted for the filing) and test results will support compliance for all production units. Although the measured output power may vary with the equipment and setup used, it is the responsibility of grantee and test labs to ensure that the devices selected for testing are in accordance with 2.907.

In addition, KDB178919 (Permissive Changes) states in Paragraph 4).c) the following:

A Class II permissive change for a version of a device with a decrease in output power or different field strength is allowable under the following conditions:

- The maximum output power rating of the original does not change and there is no increase in the original maximum output power rating.
- No design change to increase or decrease output power. A decrease in power setting configuration is acceptable.
- In no case can a power limit be exceeded.

Please note that power differences in C2PCs that exceed the old "re-measurement" tolerance will raise questions in FCC filings and TCB audits. For a more detailed answer, provide the FCC ID, a list of modifications, power measurements, and a statement of how you comply with the above requirements to your TCB so they may forward it to the FCC for a final answer.

INTERNATIONAL UPDATE

EU: NEW CENELEC STANDARDS RELEASED THIS MONTH

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

- o **EN 60335-2-76:2005/A11:2008** (1/2/2008) Household and similar electrical appliances - Safety -- Part 2-76: Particular requirements for electric fence energizers
- o **EN 61058-1:2002/A2:2008** (1/4/2008) Switches for appliances -- Part 1: General requirements
- o **EN 61915-1:2008** (1/15/2008) Low-voltage switchgear and controlgear - Device profiles for networked industrial devices -- Part 1: General rules for the development of device profiles
- o **EN 61966-2-5:2008** (1/17/2008) Multimedia systems and equipment - Colour measurement and management -- Part 2-5: Colour management - Optional RGB colour space - opRGB
- o **EN 50131-2-2:2008** (1/18/2008) Alarm systems - Intrusion and hold-up systems -- Part 2-2: Intrusion detectors - Passive infrared detectors
- o **EN 50131-2-4:2008** (1/18/2008) Alarm systems - Intrusion and hold-up systems -- Part 2-4: Requirements for combined passive infrared and microwave detectors
- o **EN 50131-6:2008** (1/18/2008) Alarm systems - Intrusion and hold-up systems -- Part 6: Power supplies

- o **EN 50410:2008** (1/18/2008) Household and similar electrical appliances - Safety - Particular requirements for decorative robots

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:

- o **IEC 60598-2-22-am2** (1/10/2008) Amendment 2 - Luminaires - Part 2- 22: Particular requirements - Luminaires for emergency lighting
- o **IEC 60335-2-23 Corr.2** (1/10/2008) Corrigendum 2 - Household and similar electrical appliances - Safety - Part 2-23: Particular requirements for appliances for skin or hair care
- o **IEC 61097-2** (1/22/2008) Global maritime distress and safety system (GMDSS) - Part 2: COSPAS-SARSAT EPIRB - Satellite emergency position indicating beacon operating on 406 MHz - Operational and performance requirements, methods of testing and required test results
- o **IEC 62271-SER)** (1/17/2008) High- voltage switchgear and controlgear - ALL PARTS
- o **IEC 62031** (1/15/2008) LED modules for general lighting - Safety specifications
- o **IEC 60601-1-SER** (1/22/2008) Medical electrical equipment - ALL PARTS
- o **IEC 60601-1-3** (1/22/2008) Medical electrical equipment - Part 1-3: General requirements for basic safety and essential performance - Collateral Standard: Radiation protection in diagnostic X-ray equipment
- o **IEC 61496-1** (1/22/2008) Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests
- o **CISPR 16-SER** (1/22/2008) Specification for radio disturbance and immunity measuring apparatus and methods - ALL PARTS
- o **CISPR 16-1-4** (1/22/2008) Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-4: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Radiated disturbances

See [IEC](http://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:

- o [ETSI TS 102 550 V1.3.1](#) (January 2008) Satellite Earth Stations and Systems (SES); Satellite Digital Radio (SDR) Systems; Outer Physical Layer of the Radio Interface
- o [ETSI TS 102 027-3 V4.2.5](#) (January 2008) Methods for Testing and Specification (MTS); Conformance Test Specification for SIP (IETF RFC 3261); Part 3: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma
- o [ETSI TS 125 306 V7.6.0](#) (January 2008) Universal Mobile Telecommunications System (UMTS); UE Radio Access capabilities (3GPP TS 25.306 version 7.6.0 Release 7)
- o [ETSI TS 102 515 V1.1.2](#) (January 2008) Methods for Testing and Specification (MTS); Internet Protocol Testing (IPT): IPv6 Core Protocol; Conformance Test Suite Structure and Test Purposes (TSS&TP)
- o [ETSI TS 132 405 V7.7.0](#) (January 2008) Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Telecommunication management; Performance Management (PM); Performance measurements Universal Terrestrial Radio Access Network (UTRAN) (3GPP TS 32.405 version 7.7.0 Release 7)
- o [ETSI TS 126 132 V7.1.0](#) (January 2008) Universal Mobile Telecommunications System (UMTS); Speech and video telephony terminal acoustic test specification (3GPP TS 26.132 version 7.1.0 Release 7)
- o [ETSI TS 125 104 V7.9.0](#) (January 2008) Universal Mobile Telecommunications System (UMTS); Base Station (BS) radio transmission and reception (FDD) (3GPP TS 25.104 version 7.9.0 Release 7)
- o [ETSI TS 125 141 V7.10.0](#) (January 2008) Universal Mobile Telecommunications System (UMTS); Base Station (BS) conformance testing (FDD) (3GPP TS 25.141 version 7.10.0 Release 7)
- o [ETSI TS 144 031 V7.7.0](#) (January 2008) Digital cellular telecommunications system (Phase 2+); Location Services (LCS); Mobile Station (MS) - Serving Mobile Location Centre (SMLC) Radio Resource LCS Protocol (RRLP) (3GPP TS 44.031 version 7.7.0 Release 7)

See new [ETSI website](http://etsi.org) for additional information.

UK: LICENSE-EXEMPTION FRAMEWORK REVIEW On December 4, 2007, Ofcom published a statement on the framework for managing spectrum used by license-exempt devices. This License-Exemption Framework Review presents a high-level framework intended to further enhance the efficiency of the license-exempt use of spectrum. However, the document does not propose to make any imminent changes to the license-exempt use of specific bands at this stage. The following recommendations are proposed:

- Light-licensing regimes should only be adopted when explicit coordination among the operators of the radio devices is both feasible and a technical necessity. License-exemption should be adopted otherwise.
- Radio devices transmitting at sufficiently low power spectral densities which do not cause harmful interference should be exempted from licensing. A power spectral density lower bound for the licensing of radio devices should be considered which is equal to the UWB limits for frequencies below 10.6 GHz and is extrapolated from the UWB limits for frequencies above 10.6 GHz (accounting for increased signal attenuation with frequency).

Transmissions below the specified limits may be exempt from licensing, subject to compliance with all UWB operational restrictions (other than minimum bandwidth) as specified in Decision 2007/131/EC. [Link](#)

JAPAN: MIC TO AMEND FREQUENCY PLAN On January 16, 2008, Japan's Ministry of Internal Affairs and Communications (MIC), issued a press release announcing its intention to partially amend the Frequency Assignment Plan in order to secure the frequencies for the mobile communication systems, particularly the fourth-generation mobile communication systems to be implemented in 2010 and onward. Specifically, MIC will designate November 30, 2012, as the termination date for the use of the 3,456-3,600 MHz band for broadcasting business fixed service, and January 1, 2010, as the date additional bandwidth is to become available for mobile service for fourth-generation and other mobile communication systems (on the same date, the frequency band above 3.6 GHz is to be reallocated and become available for the service). [Link](#)

BRAZIL: ANATEL CELL PHONE BATTERY REQUIREMENTS As of February 2008, cell phone batteries sold in Brazil, together or separately from cell phones, will need ANATEL approval. The ANATEL label for batteries is different from those of other telecom products. Additionally, ANATEL approval for cell phone chargers will become mandatory (a separate certificate will be necessary). [Link](#)

FCC: WIRELESS AUCTION BEGINS TODAY (1/24/08) The FCC begins receiving bids today on valuable 700 MHz spectrum. Potential bidders include AT&T, Verizon Wireless, EchoStar, Cable Systems, as well as many others. The electronic auction is expected to continue for weeks or months and will end when no more bids are submitted. The FCC plans to hold multiple rounds of back-and-forth bidding each day on each of five blocks of spectrum available for sale. Results from each round will be publicly available on the FCC's website but the identities of successful bidders will be kept secret until the entire auction ends. It has been estimated the auction could raise as much as \$15 billion for the U.S. government.

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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