MultiPoint
A Rhein Tech EMC Regulatory Update

January 2010

RF/EMC Regulatory Update

for the United States, Canada & European Union

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.

New Service:
Rhein Tech Laboratories, RTL, is now providing a new market differentiating consulting service that will focus on assisting our clients in optimizing their internal design and manufacturing processes which are critical to consistent product performance.

Have you ever been faced with situations like this? A product submitted for compliance testing failed regulatory limits with no identifiable reason for it. A regulatory or customer inquiry has been made yet test records indicate no problem. The first 1000 units built worked fine but suddenly performance issues became apparent - yet no product changes have been made. Getting units ready for product testing can be challenging, and you wish you had a process that defined when, in what instances, along with an overall testing strategy to optimize your total costs. Keeping material costs down is important, but you have always been concerned about how to ensure that all the suppliers used are adequately tested to minimize the risks that multiple suppliers may have on product performance.

RTL has partnered with a leading telecommunications compliance process specialist whose focus is to offer our clients solutions to these questions and related client issues. Our expert will partner with you to analyze product performance issues discovered during your testing program at RTL, help determine the process gap in the design, manufacturing and/or supply chain that led to it, and recommend solutions. This service offers a holistic compliance program tailored to your specific need that clearly delineates the instances when testing should be done as well as identifying when testing is needed due to manufacturing changes.

Our expert comes from a major telecommunications manufacturer where he developed processes and procedures to address the above questions, inclusive of software and hardware, spanning many technologies and platforms. With over 100,000+ ship approvals globally, our expert has experienced the challenges in varying product performance and the impact that inadequate or non robust process controls can have. With his management of global compliance organizations he brings the right insight of how to partner with quality, technical operations, and engineering teams to provide the optimum balance of effort while minimizing costs. Call us at 703-689-0368 for more detailed information.

DFS Testing for Client and Master Devices

QUESTION: We manufacture an 802.11 device and have the following questions on Dynamic Frequency Selection (DFS) testing for client and master devices:

Client devices:

- Can a DFS report containing data taken on a channel inside the 5600-5650 MHz sub band be approved?
- Can a TCB approve client devices which include middle channel EMC test data that falls inside the 5600 - 5650 MHz band? If "no", then should testing be recommended outside the band?
- Is it correct that client devices with no radar detection should not need the 20 dB bandwidth plots to show that the channels adjacent to the edges of the notched band are fully contained outside the notched band?
- Should the application include (perhaps in the attestation of passive scanning) a list of the channels subject to passive scanning and hosting that those channels falling in the 5600 - 5650 MHz band will not be used with master devices incapable of operating in that band?

Master devices (approved by the FCC):

- For a change in FCC identifier on a master device already approved to operate outside in the 5600 - 5650 MHz band, what will the FCC need to be able to process the filing beyond the "usual" supporting documents for a change in identifier?
- For a new certification application or a Class II Permissive Change, can we revise our reports to remove test data referencing channels in the 5600- 5650 MHz band and replace it with new measurement data for an alternate "middle" channel that is outside the 5600-5650 MHz band by including attestation of non-operation in the 5600-5650 MHz band along with a channel plan and add the 20 dB bandwidth measurements for adjacent channels along with manual/installation instructions clearly indicating indoor use only?

ANSWER: Please see the following answers below.

Client devices:

- If the device can operate in the 5600-5650 MHz band and was granted before March 3rd, 2009, then the answer is yes. However, you must report the FCC identifier to the FCC of the master device used to test the client devices.
- TCBs can approve clients that operate in the 5470- 5725 MHz band including the 5600-5650 MHz band. The devices must comply with Section 15.202 of the FCC's rules and regulations.
- This is correct; clients are not required to show compliance with 20 dB bandwidth requirements at 5600 MHz and 5650 MHz.
- It is recommended that the application include a channel plan. This is recommended since FCC Part 15 is un-channelized. The FCC recognizes that 802.11 devices are effectively channelized by the IEEE standard. Frame base systems are not bound by any IEEE standard so they can use any frequency plan of their choosing. Presenting a channel plan will avoid confusion and further questions.

Master devices (approved by the FCC):

- There is still currently a freeze on change in FCC identifiers for master devices that operate outside anywhere in the 5470-5725 MHz band.
- The FCC is currently limiting the use of 5470-5725 MHz to indoor use and have notched out the use of the range 5600-5650 MHz. If you do have an outdoor system then your FCC DFS testing needs to be done in the lower band because the outdoor system cannot currently be certified to operate in the 5470 MHz band in the US.

New Penalties for EU CE Logo Noncompliance

QUESTION: Our EU office has informed us as of 1/1/2010, any misuse of the CE logo is considered a punishable offense. We would like to confirm this information as soon as possible. The new requirement specifies that every component of the CE logo should have the same vertical size and the height must not be less than 5 mm. We've been told that any deviation from the aforementioned will be treated as misuse. We have the following questions:

1. When will Decision No. 765/2008/EC and 768/2008/EC be enforced and large scale market surveillance begin?
2. What about products that are already on the market but do not meet the labeling requirement after 12/31/09? Are there any penalties?
3. Is there any transitional period starting from 1/1/2010? We have heard that Poland offers a transitional period for noncompliant labels.

ANSWER: First, Decision No. 768/2008/EC is in effect 1/1/2010; this decision is only implementing what was effective under existing directives and decisions. Although fines and or other penalties were not very prevalent, requirements of the directive (now embolden by these decisions) were in effect. Most surveillance agencies were not ready to implement the decision, or if ready, did not implement it. You can expect that the ramp up to full implementation will take some time, but the directive is in effect as of 1/1/2010 and some Member States will begin enforcement as of that date.

Manufacturers should make sure that they are, at this moment, in compliance with the new decision. If manufacturers have followed all of the requirements of the directives and decisions already in existence, then the enforcement brought on by these decisions will not have great impact. If however, the directives and existing decisions have not been adequately followed and conformity to the essential requirements has not been adequately put in place, then you can expect some rather potentially serious issues beginning 1/1/2010.

Specific to the implementations are: 768/2008/EC decision from the Commission states the Member States are obligated to inform the Commission of their worst case penalty program no later than 1/1/2010. While not all Member States may actually do the in depth assessment/surveillance activities as other Member States might, their penalty structure must still be in place 1/1/2010. Penalties can be assessed anytime after that.

339/93 (i.e. the old regulation dealing with surveillance, etc.) is repealed as of 1/1/2010 and thus the newer decisions (2008/768 and 2008/765) replace this regulation effective on that date. That does not mean however that some Member States will immediately begin to bring penalties, etc. However, you must be very careful with the assumptions that some Member States may have a transitional period. While some Member States may not begin to enact penalties immediately, other Member States with surveillance activities in place may do so immediately. It would be wise to determine placing a device on the market based on Member States ready to implement surveillance activities, rather than placing products into the EU based on Member States' surveillance program that are not yet ready.

The reason is simple: On 1/1/2010, 93/465 is repealed and is replaced with decision 768/2008 (2008/768/EEC) dealing with the various CE marking modules. This means that as of 1/1/2010, the Declaration of Conformity and CE marking would have to meet the specifics of Annex III and Annex II of 2008/765. It should be noted that this is not new, as 93/465 had the same CE marking requirements. The only new requirement is the statement "If the CE marking is reduced or enlarged, the proportions given in the graduated drawing in paragraph 1 shall be respected." It was always expected that if the CE marking was reduced in size per 93/465, it was to be directly proportionate to the sample marking in that decision.

Decision 2008/765 only makes this abundantly clear. If a CE Marking followed the preexisting decision as expected, then there should be no concern. If however, a responsible party did not follow the previous CE marking decisions, then as of 1/1/2010, they must comply so that all products placed on the market on or after 1/1/2010 would be as stated in Decision No. 2008/765 and 2008/768. Manufacturers placing products in the EU would be wise to implement all aspects already in effect for the Directives in question. It should be remembered that these two Commission Decisions are basically brought about because the requirements of the Directives already in effect are not being adequately met. Consequently, ONLY if a CE marking violated the existing 93/465 would there be any issues after1/1/2010; and some Member States may begin enforcement before others.

IC RSS-210 Testing Question

QUESTION: We are designing an anti- pilferage system operating in the frequency range of 7.2 to 8.8 MHz. This particular device detects a tag upon check out in stores and deactivates the tag by burning it out. The device is a digitally swept frequency device and it hops from one frequency to the next one in line. We would like guidance on the following questions below:

1. Since we believe the fundamental limit for this device is contained in paragraph A2.3 of Industry Canada RSS-210 standard, how should the 6 dB bandwidth of this digitally swept frequency (hopping) device be measured? Is the 6 dB bandwidth only measured on one operating frequency in the 7.2 to 8.8 MHz frequency range or is the 6 dB bandwidth measured from the lowest operating frequency to the highest operating frequency?
2. Is the 99 % bandwidth needed for this device? If it is, is it measured on one operating frequency in the 7.2 to 8.8 MHz frequency range or is it measured from the lowest?
3. Paragraph A2.4 of RSS-210 standard appears to apply to swept frequency devices
4. Sub-paragraph d of paragraph A2.4 of RSS-210 standard allows out of band

ANSWER: The following below are answers to your questions:

1. The 6 dB bandwidth should be measured on a single frequency at the low, middle and high channel.
2. Yes, the 99% bandwidth needs to be reported. It is measured on a single frequency at the low, middle and high channel.
3. RSS 210 standard Annex A2.4 also applies to digitally swept-frequency devices. All the sub clauses of Annex A2.4 apply to digitally swept frequency devices.
4. Annex A2.4 Sub clause d, also applies to digitally swept frequency devices.

FCC - Clarfication on Composite Devices

QUESTION: We are interested in your interpretation of publication 584157 found in the FCC's Office of Engineering Technology (OET) database. The publication states that if you have a composite device, which consists of devices under Certification and Declaration of Conformity (DoC), you must pursue both, including labeling, FCC logo and warning statements and FCC identifier. Our test lab and TCB insist we should treat a wireless router/gateway as a composite device; that is, intentional radiator (wireless portion) done through certification and Ethernet/cable ports treated as a computer peripheral, hence the DoC logo on the label. In our opinion, this does not make sense to treat a wireless router/gateway as composite device. It is a standalone device which performs multiple functions and we cannot see how this should be treated as a separate device. Can you please comment?

ANSWER: The wireless portion falls under FCC Part 15 Subpart C section 15.247, assuming it is 802.11bgn device, and possibly under Part 15E if it supports 802.11a&n. It also falls under FCC rule Part 15 for a digital device. If it can be used in the home and can connect to a PC, then it is considered a Class B PC peripheral device, and as such, subject to either FCC Certification or DOC. Your choices are to either get the digital device certification at the same time you get the wireless portion certified as a composite device or certify the wireless device and use the Declaration DoC procedures for the digital device. The device is tested under two separate FCC rule parts. All emissions that emanate from the wireless circuitry needs to comply with the wireless rule part and all other emission with the digital rule part.

STANDARDS UPDATE

EU: NEW CENELEC STANDARDS RECENTLY RELEASED

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

- **EN 60745-2-5:2007/A11:2009** (12/18/2009) Hand-held motor- operated electric tools - Safety -- Part 2-5: Particular requirements for circular saws
- **EN 60745-2-3:2007/A11:2009** (12/18/2009) Hand-held motor- operated electric tools - Safety -- Part 2-3: Particular requirements for grinders, polishers and disk-type sanders
- **EN 62106:2009** (12/23/2009) Specification of the Radio Data System (RDS) for VHF/FM sound broadcasting in the frequency range from 87,5 MHz to 108,0 MHz
- **EN 60335-2-30:2009** (12/23/2009) Household and similar electrical appliances - Safety -- Part 2-30: Particular requirements for room heaters
- **EN 60601-2-41:2009** (12/23/2009) Medical electrical equipment -- Part 2-41: Particular requirements for basic safety and essential performance of surgical luminaires and luminaires for diagnosis
- **EN 80601-2-59:2009** (12/23/2009) Medical electrical equipment -- Part 2-59: Particular requirements for the basic safety and essential performance of screening thermographs for human febrile temperature screening
- **CLC Guide 24:2009** (12/23/2009) Electromagnetic Compatibility (EMC) Standardization for Product Committees concerned with apparatus
- **EN 60318-1:2009** (12/23/2009) Electroacoustics - Simulators of human head and ear -- Part 1: Ear simulator for the measurement of supra-aural and circumaural earphones
- **EN 62110:2009** (12/23/2009) Electric and magnetic field levels generated by AC power systems - Measurement procedures with regard to public exposure
- **EN 62433-2:2010** (01/07/2010) EMC IC modelling -- Part 2: Models of integrated circuits for EMI behavioural simulation - Conducted emissions modelling (ICEM-CE) -

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 60825-1 Corr.I1** (12/17/009) Interpretation sheet - Safety of laser products - Part 1: Equipment classification and requirements
- **IEC 60950-1-am1** (12/17/2009) Amendment 1 - Information technology equipment - Safety - Part 1: General requirements
- **IEC 60404-3-am2 Corr.1** (12/17/2009) Corrigendum 1 - Amendment 2 - Magnetic materials - Part 3: Methods of measurement of the magnetic properties of electrical steel strip and sheet by means of a single sheet tester
- **IEC 60068-2-82 Corr.1** (12/17/2009) Corrigendum 1 - Environmental testing - Part 2-82: Tests - Test XW1: Whisker test methods for electronic and electric components
- **IEC 60216-5 Corr.1** (12/18/2009) Corrigendum 1 - Electrical insulating materials - Thermal endurance properties - Part 5: Determination of relative thermal endurance index (RTE) of an insulating material

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 102 741 V1.1.1 (November 2009) Broadband Radio Access Networks (BRAN); Test Report Template for testing to EN 301 893 V1.5.1 (R&TTE)
- ETSI EN 301 166-1 V1.3.2 (November 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector; Part 1: Technical characteristics and methods of measurement
- ETSI EN 301 166-2 V1.2.3 (November 2009) Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive

See new ETSI website for additional information.

FCC: WTB SEEKS COMMENTS ON SIGNAL BOOSTERS On 1/6/2010, the FCC's Wireless Telecommunications Bureau, WTB, released WT Docket No. 10-4 seeking comment on three Petitions for Rulemaking and two Petitions for Declaratory Ruling (collectively, Petitions) regarding the proper use of signal boosters on frequencies licensed under Parts 22, 24, 27, and 90 of the FCC's Rules. Signal boosters are devices that amplify and/or distribute wireless signals to areas with poor signal coverage, such as tunnels, subways, large buildings, and rural areas. When properly installed, these devices, which can either be fixed or mobile, can help consumers, wireless service providers, and public safety first responders by expanding the area of reliable service to unserved or weak signal areas. However, as articulated in the Petitions, improper installation and use of these devices can interfere with network operations and cause interference to a range of communication services. FCC rules currently allow for the use of signal enhancing devices and several parties have filed Petitions seeking clarification of or changes to FCC's rules to address the proper use and regulation of these devices.

The FCC seeks comments on these petitions on or before February 5, 2010 and reply comments on or before February 22, 2010. All filings should reference the docket number of the proceeding, WT Docket No. 10-4. Link

CANADA: SPECTRUM UTILIZATION POLICY FOR THE 11 GHZ BAND On January 9, 2010, Industry Canada published Notice No. DGTP-013-09 - Decision Regarding Spectrum Utilization Policy for the 11 GHz Band. The purpose of the publication was to bring to a conclusion the public consultation process, initiated in December 2008 through Canada Gazette Notice DGTP-003-08,1 and to announce Industry Canada's decision regarding the request to use parts of the 11 GHz band for Direct-to-Home (DTH) satellite broadcasting services in Canada.

The following transitional solutions were decided:

1. Until January 1, 2028, two 125 MHz band segments, namely 11.075-11.2 GHz and 11.575-11.7 GHz, are available to provide DTH services in Canada from extended-Ku band satellite orbital positions approved by Industry Canada before December 2009.
2. Until January 1, 2026, Industry Canada will not license new FS systems in the bands 11.075-11.2 GHz and 11.575-11.7 GHz, subject to the provisions of item 5 below. After January 1, 2026, the Department will make every effort to place new terrestrial links in other portions of the band or in other bands until January 1, 2028.
3. After January 1, 2028, these DTH services will no longer be permitted in the bands 11.075-11.2 GHz and 11.575-11.7 GHz, and any DTH use in Canada will have migrated out of these bands.
4. Existing fixed systems operating in the bands 11.075-11.2 GHz and 11.575-11.7 GHz may continue to operate under the terms of their current authorization. Modifications which do not

increase the interference environment to DTH services will be considered on a case-by-case basis.

5. If a DTH satellite has not been launched to operate in these band segments by January 1, 2014, the band segments will revert to shared use between terrestrial and satellite services, as prescribed for the 10.7-11.7 GHz band in SP 3-30 GHz. (Note: A launch failure would be considered as meeting this milestone).
6. Satellite services will respect the power flux- density limits in No. 21.16 of the ITU Radio Regulations for this band.

Link

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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.

A special thank you to those who have recommended and contributed articles for our newsletter. Please continue to forward new and interesting material to our attention: multipoint@rheintech.com. We respect the privacy of our customers and colleagues. If you would like to cancel your MultiPoint updates, please follow the instructions at the end of this email. The information in the MultiPoint update is subject to change without notice.

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