MultiPoint
A Rhein Tech EMC Regulatory Update

June 2005

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.

EU Scanning Receiver Requirements

QUESTION: Our firm manufactures a wide band scanning receiver from 30 MHz to 1300 MHz, for the EU, and we would like to know the applicable standards our device falls under. It appears there may be several standards; please provide your opinion on this issue.

ANSWER: Scanning receivers fall within the scope of the R&TTE Directive. The R&TTE Directive is applicable to transceivers, transmitters and receivers. Until recently, one could apply the generic EN 300 339: 1998 standard, however, this changed when the latest list of harmonized standard was released and EN 300 339: 1998 is now listed as expired. Although this appears to be an "error" on the part of ETSI, the following should now apply to scanning receivers:

1. EMC (except radiated emissions): EN 301 489-1 V1.4.1
2. Receiver Tests:

- EN 300 330-1 V1.3.2 / EN 300 330-2 V1.1.1 (for receivers in the range of 9-30 MHz)
- EN 300 220-1 V1.3.1/EN 300 220-3 V1.1.1 (for receiver in the range of 25-1000 MHz)
- EN 300 440-1 V1.3.1/EN 300 440-2 V1.1.1 (for receivers in the range of 1-40 GHz)

As an example, when a receiver operates in the frequency range of 9 kHz to 1000 MHz both EN 300 330 and EN 300 220 must be applied with respect to the appropriate receiver tests and limits. Please note that notification is not necessary and NB opinion is voluntary.

TCB Certification of 5 GHz Portable Devices

QUESTION: We were recently told that Telecommunication Certification Bodies, TCBs, would very soon be authorized by the Commission to certify 5 GHz Portable Devices. Regarding this issue, we have the following questions:

1. When will the Commission make a formal announcement that TCBs can certify 5 GHz portable devices?
2. After the formal announcement by the Commission, when does the authorization becomes effective?
3. When will the Commission authorize TCBs to certify 5 GHz Portable Devices?

ANSWER: Unfortunately, the Commission has not stated an exact timeline for the authorization of TCB's to approve 5 GHz portable devices. There may be rumors that the Commission would likely authorize TCB's to certify the aforementioned devices sometime in June of this year, however there is no indication this will happen. A formal announcement has not been made by the Commission and there are no indications of when this will occur. When questions were asked regarding this issue during the last TCB training, the Commission was not sure when and how it will be announced. The exact form of the announcement would not be known until it is released; it may be announced during monthly TCB conference calls, a public notice, future TCB training sessions, or some alternative method. From our understanding, once the announcement is made, it will likely be effective immediately. However, depending on how it is released, there may be further additional requirements attached to the new policy (i.e. TCBs to attend a new training seminar by the Commission).

FCC Rules for Smart Antenna Systems

QUESTION: We are designing a Smart Antenna System (SAS) under the Commission's Part 15.247 rules and regulations; please clarify what the Commission considers as SAS.

ANSWER: Under section 15.247(c) (2) of the Commission's rules and regulations, Smart Antenna System (SAS) operates under the following conditions:

1. Operation is typically at 2.4 GHz under 15.247(c) 2.
2. More than two beams are formed.
3. Communication to multiple or mobile receivers is allowed.
4. Different information is sent to different receivers (this does not include occasional management/control signals or occasional multicasting).
5. Sectorized antenna systems are allowed.

TCB Approval of Smart Antenna Systems

QUESTION: Our firm manufactures Smart Antenna Systems and we would like to know if TCBs are allowed to certify the following types of systems:

1. Phased array systems?
2. Sectorized systems?
3. Spatial Multiplexing "MIMO (Multiple Input Multiple Output) systems with or without cyclic delay diversity?

ANSWER: In a recent TCB training session, the Commission authorized TCB's to approve the following specific systems as mentioned above:

1. Phased array systems
2. Sectorized systems
3. Spatial Multiplexing "MIMO (Multiple Input Multiple Output) systems with or without cyclic delay diversity

The device should operate as described above; otherwise TCBs are not allowed to certify them. The operational description of the device should ensure the device is one of the types of devices listed above. Marketing literature alone is not sufficient to justify the device functions as described above. The Commission only allows TCBs to approve Spatial Multiplexing "MIMO" systems or Phased array "MIMO". TCB's cannot approve systems using a combination of the above. For example, TCB's cannot approve a Phased Array Spatial Multiplexing "MIMO" system. For further information and a brief theory of operation on Spatial Multiplexing MIMO Smart antennas see the abstract below taken from IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION, VOL. 52, NO. 1, JANUARY 2004.

- **IEEE Transactions on Antennas and Propagation**

INTERNATIONAL UPDATE

Korea signs MRA with U.S. to allow U.S. labs to perform Korean Testing

On May 10, 2005, the U.S. and the Republic of Korea signed exchange letters to implement Phase-I of the APEC Tel MRA. Radio Research Laboratory (RRL) within the Ministry of Information and Communication (MIC) is the Regulatory as well as the Designating Authority in Korea. U.S. test labs may now apply to A2LA or NVLAP, under Phase-I of the MRA for Korean requirements, for accreditation to Korean technical requirements. Once accredited, U.S. labs may test devices and submit test reports directly to RRL for approval and in country testing will not longer be required. Details of these regulations are available at the Korean web site in English at website below.

- **RRL website**

FCC Announces that 800 MHz Band Reconfiguration Will Begin on June 27, 2005

On May 27th, 2005, the FCC issued OWT Docket No. 02-55 to announce 800 MHz band reconfiguration to commence on June 27, 2005. Previously, in July 2004, the FCC adopted a Report and Order to reconfigure the 800 MHz band and eliminate interference to public safety and other land mobile communication systems operating in the band. As specified in the Report and Order, the band reconfiguration process is being overseen by a Transition Administrator (TA) which has provided the Commission with a plan detailing when band reconfiguration will commence in each of the fifty- five 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) regions.

As part of the 800 MHz band reconfiguration process, the FCC stated that it would issue a Public Notice thirty days before reconfiguration is scheduled to start in each NPSPAC region. The Commission also stated that it would freeze the filing of certain 800 MHz applications for the regions being reconfigured when it issued a Public Notice announcing the date when voluntary negotiation of relocation agreements must be concluded.

The 800 MHz band reconfiguration must be completed by June 26, 2008 (thirty-six month benchmark). Finally, to facilitate the 800 MHz reconfiguration process, the FCC has established new radio service codes for licenses that list 800 MHz band frequencies governed by Part 90 of the FCC's Rules.

- **Docket 02-55 link**
- **800 MHz Plan**

New EU Standards The European Commission has published an updated list of standards in the Official Journal of the European Union to be used for assessing compliance to the European Union's EMC Directive (89/336/EEC). Several changes should be noted:

- In the area of power line (or carrier current) systems immunity, EN 50065-2-1, 2, and 3 must be used for residential, industrial, and power utility environments, respectively. As of the end of 2004, the alternate use of generic standards was discontinued.
- EN 55020 governs the immunity of broadcast receivers (AM, FM, TV). Note that as of December 1, 2005, the current version (EN 55020:2002 and its A1 amendment) must be used, as earlier editions will be withdrawn.

- **EU Link**

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), ACA (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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