MultiPoint
A Rhein Tech EMC Regulatory Update

February 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 Rules for Embedded RFID Transmitters

QUESTION: Our firm is manufacturing a "stand alone" desktop printer and we would like to embed an RFID transmitter (without a shield in the printer). Furthermore, we would like to certify the RFID transmitter used in these types of printers under the FCC's Limited Modular Approval policy. Is this an acceptable practice?

ANSWER: Limited Modular Approval is used when a transmitter cannot meet all eight of the FCC's requirements found in Public Notice DA 00-1407; *Part 15 Unlicensed Modular Transmitter Approval.*

Testing in the host with no shield is required for LMA transmitters because the shielding requirement is needed to ensure compliance in case there is coupling of the module with electronic components in the host, since the printer is a mobile device. Otherwise this would not be applicable. If the printer were a portable device, then the FCC would place an applicable grant condition on the LMA, similar to: "*This Limited Module Approved device is intended to be used in desktop printers similar to those described in this filing and manufactured under the control of the grantee.*" Because host dependent LMAs require testing in hosts, testing in the host printer is required to verify compliance irrespective of the levels of a standalone test.

FCC Testing Requirements for WMTS Devices

QUESTION: What is the FCC's requirement for testing and certifying Wireless Medical Telemetry Service (WMTS) devices that operate as a spread spectrum transmitter?

ANSWER: FCC 47 CFR Part 95, Subpart H, states the requirements for spread spectrum transmitters operating in WMTS bands. These transmitters require the capability to operate in one or more 1.5 MHz channel(s) as specified in Section 95.1115(d)(2) of the rules. Spread spectrum devices that operate in the WMTS bands under Part 95H require the 1.5 MHz channel mode in the event there are frequency coordination issues as specified in Section 95.1115(d)(4). The certification application should have test data for the 1.5 MHz channel mode. Additionally, there should be two line items in the application (one for each mode) and grant conditions stating that there is a 1.5 MHz channel mode to support frequency coordination if the spread spectrum mode causes frequency coordination issues.

Mainland China Labs and FCC DoC Procedure

QUESTION: We would like to use our local test laboratory in mainland China to perform FCC Part 15 emission testing on our MPEG PDA device and issue a Declaration of Compliance (DoC) certificate. Are the EMC laboratories in mainland China allowed to issue DoC certificates?

ANSWER: FCC DoC certificates cannot be issued by EMC laboratories in countries where a Mutual Recognition Agreement (MRA) with the United States does not exist. Currently, the US and China do not have an MRA. At past Asia Pacific Economic Cooperation (APEC) meetings, brief informal discussions have taken place with the regulatory authorities in China to begin MRA arrangements but, to date, these meetings have not produced any results. When an MRA becomes operational between the two countries, then accredited labs in China would be able to test Information Technology (IT) equipment. This is in accordance with the FCC rules and regulations 47 CFR 2.948(d), CFR 2.948(e), and CFR 2.948(e)(1). EMC test laboratories in China or Hong Kong may not perform DoC testing to allow equipment to be marketed in the United States in accordance with FCC rule Part 47 CFR 2.948(d). When equipment is to be authorized under the DoC process, the party performing the test must be ISO/IEC 17025 accredited. Furthermore, FCC Part 2.948(e) has additional requirements for labs located outside the US. One of these requirements, FCC Part 2.948(e) (1), specifies that a foreign country must have a MRA with the US in order for the US to accept DoC test reports.

FCC Rules for Satellite Receiver Systems

QUESTION: We manufacture a Satellite Receiver System that includes a set-top receiver unit. What are the FCC's certification requirements?

ANSWER: Satellite Receiver Systems consists of an outdoor dish antenna with one or more Low Noise Block-down converters, (LNB), connected to one or more indoor set-top receiver units. The dish antenna and each LNB receives approximately a 1.1 GHz block of frequencies typically assigned between 2 GHz to 12 GHz. The LNB translates the block frequencies into lower Intermediate Frequencies, typically between 950-2150 MHz for transmission over a coaxial cable to the set-top receiver unit. The receiver unit usually connects to a TV, computer or other type of equipment.

The set-top receiver unit is subject to FCC DoC or Certification per FCC Part 15.101(a) of the FCC's rules and regulations, if it receives frequencies between 30-960 MHz. Its emissions should be tested based on the frequency range specified under FCC Part 15.31(m), for the portion of the receiver that tunes below 960 MHz. If the receiver unit contains digital circuitry, the digital device portion of receiver must be tested while the Set-top receiver unit is tuned above 960 MHz. In the latter test, the receiver unit Local Oscillator (LO) emission and its harmonics may be ignored, but the remaining emissions are considered to be from the digital circuitry.

Although a set-top receiver unit that only tunes into frequencies above 960 MHz may be exempt from the receiver requirements according to FCC Part 15.101 (b), it may still need to be verified if it includes digital circuitry above 9 kHz. In most cases additional authorization procedures and testing may likely be applicable in the following situations.

1. The set-top receiver unit has an RF modulator output (channel 3 or 4), that connects to the RF Input of the TV. This causes the receiver unit to be subject to FCC DoC or Certification, plus the requirements of a TV Interface device (FCC Part 15.115)
2. The set-top receiver unit may be designed to connect to a Class B computer via a LAN, USB or Firewire (IEEE 1394) port. In this instance, the Set- top receiver unit is subject to FCC DoC or Certification per FCC Part 15.101(a) as a Class B computer peripheral.

INTERNATIONAL UPDATE

EU: NEW CENELEC STANDARDS RELEASED THIS MONTH This is a shortened list of the CENELEC standards published during the past month:

- **EN 62132-1:2006** Integrated circuits - Measurement of electromagnetic immunity, 150 kHz to 1 GHz -- Part 1: General conditions and definitions CLC/SR 47A 2006-02-10
- **EN 61338-1-4:2006** Waveguide type dielectric resonators -- Part 1-4: General information and test conditions - Measurement method of complex relative permittivity for dielectric resonator materials at millimetre-wave frequency CLC/SR 49 2006-02-03
- **EN 61543:1995/A2:2006** Residual current- operated protective devices (RCDs) for household and similar use - Electromagnetic compatibility CLC/TC 23E 2006-02-03
- **EN 61951-1:2003/A1:2006** Secondary cells and batteries containing alkaline or other non-acid electrolytes - Portable sealed rechargeable single cells -- Part 1: Nickel-cadmium CLC/TC 21X 2006-01-27
- **EN 62132-5:2006** Integrated circuits - Measurement of electromagnetic immunity, 150 kHz to 1 GHz -- Part 5: Workbench Faraday cage method CLC/SR 47A 2006-01-27
- **EN 61267:2006** Medical diagnostic X-ray equipment - Radiation conditions for use in the determination of characteristics CLC/TC 62 2006-01- 27
- **EN 60664-4:2006** Insulation coordination for equipment within low-voltage systems -- Part 4: Consideration of high-frequency voltage stress CLC/SR 109 2006-01-27
- **EN 60794-2-21:2006** Optical fibre cables - - Part 2-21: Indoor cables - Detailed specification for multi-fibre optical distribution cables for use in premises cabling CLC/TC 86A 2006-01-20

See www.cenelec.org for additional information.

EU: NEW IEC STANDARDS RECENTLY RELEASED

- **CISPR 13-am2 (24 January 2006)** Amendment 2 - Sound and television broadcast receivers and associated equipment - Radio disturbance characteristics - Limits and methods of measurement
- **CISPR 16-1-3 Corr.1 (9 February 2006)** Corrigendum 1 - Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-3: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Disturbance power
- **CISPR 16-SER (14 February 2006)** Specification for radio disturbance and immunity measuring apparatus and methods - ALL PARTS
- **CISPR 22-am2 (24 January 2006)** Amendment 2 - Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
- **IEC 60335-2-17-am1 (23 January 2006)** Amendment 1 - Household and similar electrical appliances - Safety - Part 2-17: Particular requirements for blankets, pads and similar flexible heating appliances
- **IEC 60704-3 (13 February 2006)** Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 3: Procedure for determining and verifying declared noise emission values
- **IEC 60929 (23 January 2006)** AC-supplied electronic ballasts for tubular fluorescent lamps - Performance requirements
- **IEC 61000-4-3 (7 February 2006)** Electromagnetic compatibility (EMC) - Part 4-3 : Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
- **IEC 61937-5 (26 January 2006)** Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 5: Non-linear PCM bitstreams according to the DTS (Digital Theater Systems) format(s)
- **IEC 61967-4-am1 (9 February 2006)** Amendment 1 - Integrated circuits - Measurement of electromagnetic emissions, 150 kHz to 1 GHz - Part 4: Measurement of conducted emissions - 1 ohm/150 ohm direct coupling method

See IEC for additional information.

EU: NEW ETSI STANDARDS RELEASED THIS MONTH

- ETSI EN 301 428 V1.3.1 (2006- 02) - Satellite Earth Stations and Systems (SES); Harmonized EN for Very Small Aperture Terminal (VSAT); Transmit-only, transmit/receive or receive- only satellite earth stations operating in the 11/12/14 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE directive
- ETSI EN 301 360 V1.2.1 (2006- 02) - Satellite Earth Stations and Systems (SES); Harmonized EN for Satellite Interactive Terminals (SIT) and Satellite User Terminals (SUT) transmitting towards geostationary satellites in the 27,5 GHz to 29,5 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE Directive
- ETSI EN 301 443 V1.3.1 (2006- 02) - Satellite Earth Stations and Systems (SES); Harmonized EN for Very Small Aperture Terminal (VSAT); Transmit-only, transmit-and-receive, receive-only satellite earth stations operating in the 4 GHz and 6 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE Directive
- ETSI TS 102 177 V1.3.1 (2006- 02) - Broadband Radio Access Networks (BRAN); HiperMAN
- ETSI EN 301 843-6 V1.1.1 (2006-01) - Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for marine radio equipment and services; Part 6: Specific conditions for Earth Stations on board Vessels operating in frequency bands above 3 GHz
- ETSI TS 134 124 V7.2.0 (2005- 12) - Universal Mobile Telecommunications System (UMTS); Electromagnetic compatibility (EMC) requirements for mobile terminals and ancillary equipment (3GPP TS 34.124 version 7.2.0 Release 7)

EU: INTERACTIVE DIGITAL TELEVISION On February 2, 2006, the EU Commission adopted a policy pursuant to Communication COM(2004) 541 of July 30, 2004. This policy for digital interactive televisions mandates that voluntary standards are the best way to achieve roll-out of new digital services in Europe. The EU Commission believes that compulsory technical standards imposed by regulators are not necessary for the roll-out of interactive digital television in Europe because the dynamic market. They feel the market is best served by voluntary, industry-led standardization initiatives. The EU Commission's priority is now to work with EU Member States to ensure a smooth and rapid switchover to digital TV. The Commission will continue to promote open, interoperable standards for digital television in Europe and worldwide.

Click link for additional information

JAPAN: PROPOSED FREQUENCY BANDS In the February 10th, 2006 issue of the **MIC Communications News**, an overview of wireless broadband promotion was presented. In 2006, MIC intends on establishing a regulatory framework for wireless broadband. Proposed frequency bands include as follows:

- 3G systems: 800 MHz, 1.5 GHz, 1.7 GHz, 2 GHz, and 2.5 GHz bands
- 4G systems: 3.4 to 4.2 GHz and 4.4 to 4.9 GHz
- Broadband mobile wireless access systems: 2.5 GHz
- Next Gen. home appliances: 5 GHz
- FWA systems: 1.5 GHz, 2.5 GHz and 4.9 to 5 GHz
- Intelligent Transport Systems: road to car (5.8 GHz) and Millimeter wave radar to identify road obstacles (71 to 81 GHz)

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CANADA: MODIFICATION OF FREQUENCY ALLOCATION TABLE

In January 2006, Industry Canada modified its Table of Frequency Allocations to recognize the use of the frequency band 2320-2345 MHz by the broadcasting satellite service and complementary terrestrial broadcasting service on a primary basis.

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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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