MultiPoint
A Rhein Tech EMC Regulatory Update

Issue 2 / March 2003

Dear Customer,

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. Thus, we hope you find our updates valuable, and welcome your calls and or emails if you have any special needs or questions. Please call at 703-689-0368 or email us at mailto:multipoint@rheintech.com

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Modular and limited modular transmitters:

Question:
What is the FCC's definition of a modular or limited modular transmitter?

Response:

1. Modular transmitters or limited modular transmitters are not defined or described in the FCC rules, by TCBs, or by test laboratories. Manufacturers or their agents must contact the Commission to determine if a device can be classified and approved under the Commission's modular or limited modular policy.

2. Modular and limited modular transmitters have been authorized under the following FCC policy that has evolved and continues to evolve as technology and the FCC rules change. Limited modular approved devices have the same restrictions as modular approved devices except that limited modular approved devices are host dependent. This means the Commission allows the limited modular transmitter to be used in a typical limited host configuration. The limitation is usually

placed on the grant with respect to the type of host that the modular transmitter can use. A typical example is a limited modular compact PCI card in a laptop computer; such modular transmitters can be used in similar configurations, as long as no other changes (such as antenna type) are made:

A. Authorization under FCC rule part 15.231 is not permitted:

1. Strict operational and timing requirements are necessary.
2. Data transmission is prohibited except for operation under Section 15.231(e) field strength levels and timing requirements.
3. If a modular transmitter is granted for operation under section (a) through (d) of Part 15.231 rules, there is no assurance that this module will not be used for data transmission in violation of Section 15.231(e) field strength levels and timing requirements in some usage.

B. There are no other restrictions on modular approval of a transmitter at this time. However, as technology changes and the FCC becomes aware of some other unforeseen problem with modular approvals, they may extend this restriction to other sections of Part 15.

C. No official FCC Rules permit authorization of a transmitter as a module but the following standards have been uniformly applied as a Commission policy in support of industry needs. For a module to be approved, the modular transmitter must:

1. Have its own RF shielding, buffered modulation/data inputs (if such inputs are provided), contain its own power supply regulation, meet the antenna requirements of Section 15.203, be tested in a stand-alone configuration, i.e., the antenna, AC or DC power and data input/output lines must be connected to the module but, the module must not be inside another case during testing.

2. Be labeled with its own FCC ID number, **and** if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1." The exact wording is not specified in the FCC's Rules (since modules are not specifically addressed), but similar wording that expresses the same meaning may be used.

3. Address compliance with the Commission's RF exposure limits in Sections 1.1310 and 2.1093. Unlicensed PCS devices operating under Subpart D of Part 15, UNII devices operating under Subpart E of Part 15, and millimeter wave devices operating under Sections 15.253 and 15.255 require routine environmental evaluation for RF exposure prior to equipment authorization in accordance with Sections 15.319(i), 15.407(f), 15.253(f) and 15.255(g), respectively. Therefore, routine RF evaluation is required for these tramitters. In addition, spread spectrum transmitters operating under Section 15.247 are required to address RF exposure compliance in accordance with Section 15.247(b)(4). If it cannot be demonstrated that a spread spectrum transmitter will meet these requirements with proper installation, operating/ warning

statements or labels, routine RF evaluation must be used to demonstrate compliance. In short, demonstrating compliance with the RF exposure limits for a modular transmitter will be handled on a case-by-case basis, with the knowledge of final usage ultimately determining the possibility of approval for the module.

4. Have on the grant either the word "module" or "modular" in the description of the device. This is so the FCC can identify that the transmitter was approved as a module.

Colocated transmitters:

Question:
What condition produces colocated transmitters and what tests are required?

Response:
Colocated transmitters exist when two or more transmitters are installed less than 20 cm apart and all transmitters transmit simultaneously. An MPE measurement is performed using the RF Exposure limits from OET Bulletin 65: "Evaluating compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation", and Subpart I of Part 1 of the 47 CFR: "Radio frequency radiation exposure limits", 47 CFR paragraph 2.1091: "Radio frequency radiation exposure evaluation: mobile and unlicensed devices."

EU transition to 230V power:

Question:
The European Union was to transition to 230V power in two phases:

1. January 1st 1995, the United Kingdom and other countries using 240VAC were to declare their power would be set for 230VAC +10% -6%, while the countries using 220VAC would declare that their power was now set for 230VAC +6% -10%.
2. January 1st, 2003 all EU countries would declare their power to be 230VAC +10% -10%.

Did this transition occur? Are there any official documents to that effect in the Official Journal of the EU?

Response:
For the UK, you will not find any information in the OJ. Nonetheless it was done. The declaration would have been performed by either the Electricity Association on behalf of suppliers, or perhaps the Department of Trade and Industry (DTI). The 2003 date has been relaxed for some countries, which cannot meet the requirements until 2008.

Pulsed modulated signals and duty cycle factor:

Question:
I have a device that is pulsed modulated. I have calculated the duty cycle correction factor. Can I apply the correction factor to the peak measurements in order to calculate my result?

Response:
When making measurements that involve pulse-modulated signals other than spread spectrum-modulated signals, the spurious noise measured must be recorded first as peak measurements. FCC 15.35 specifies that the peak reading must not be greater that the average measurement by 20 dB. Therefore, the peak measurement must be corrected using the duty cycle factor. The result is then compared with the average measurement when the average limit is applicable. The most stringent result is used for the final measurement.

Worldwide updates:

FCC Update
On March 13, 2003 the FCC issued a Notice of Inquiry (Notice) requesting public comment on the possibility of incorporating receiver interference immunity performance specifications into its spectrum policy on a broader basis. By improving receiver immunity, the FCC feels that more efficient use of the spectrum could result, thereby creating new and additional use of radio communications by the public. The Commission is seeking comment, information, and research concerning receivers in the following areas: 1) immunity performance and interference tolerance of existing receivers, 2) possibilities for improving the level of receiver immunity in the various radio services, 3) potential positive and negative impact of receiver standards on innovation and the marketplace, 4) possible approaches by which desired levels of receiver immunity could be achieved, and 5) considerations that should guide the Commission's approach to these matters. The Commission stated that it is not its intent at this time to implement a new regulatory regime that would subject all receivers to mandatory standards. See ET Docket No. 03-65 at www.fcc.gov for additional information.

China and Singapore Update
China and Singapore recently signed a Memorandum of Understanding (MOU) to allow certified products to cross each other's borders freely without being re-certified. This MOU is effective beginning December 1, 2002 and allows a designated group of products under CCC rules (manufactured in China or Singapore) that are certified in China to be sold in Singapore without re-certification or vice-versa. This MOU will allow for future Mutual Recognition

Arrangement between the two parties. Currently, Singapore has MRAs with New Zealand, Australia, and Japan. The following electronic and electrical products are covered by this MOU: machinery, medical devices, telecom devices, rubber products, motor vehicle parts, and IT equipment.

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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 for wireless intentional radiators, all FCC rules and regulations, VCCI (Japan), ACA (Australia), and other international standards.

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