From:	Marianne Bosley
Sent:	Monday, May 12, 2003 1:54 PM
To:	Greg Czumak
Cc:	Chris Harvey; Shari Meyers; Liming Xu
Subject:	RE: Metrak #13384 15.247 report

Greg,

Attached is the revised report for this one. Below in Liming's email are some answers, and others are in the report.

1. Chris answered in his previous email (whole IBM webpad is Class A device so Verification is appropriate – statement attesting to commercial restriction for this version).

2. John Hibbard has verified that this device is not a modular approval.

3. Included in revised report.

4. Included in revised report.

5. Answer below.

6. Included in revised report.

7. Included in revised report.

8. Included in revised report.

9. No emissions observed (answer below).

EMC13384-247draf
t1 rev.pdf (46...

Further RT or ready to Grant (15.247 portion)? New checklist?

-----Original Message-----
From: Liming Xu
Sent: Friday, May 09, 2003 7:59 PM
To: Marianne Bosley
Cc: Chris Harvey
Subject: RE: Metrak #13384 15.247 report

-----Original Message-----
From: Marianne Bosley
Sent: Friday, May 09, 2003 3:38 PM
To: Liming Xu
Cc: Chris Harvey
Subject: Metrak #13384 15.247 report

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Below are Greg's comments from his review.  If it is considered a module, I can ask
him for the 8 part letter, just let me know.



RT questions:
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1. Does the EUT meet the definition of a personal computer? Or just a computer peripheral, if it can be directly attached to a pc via its USB ports? If so, how is this portion of the EUT being authorized? If it does meet the definition of a peripheral, please note that the test report is not sufficient for authorization, as the test set up does not meet the minimum system requirements of C63.4. Please address.

2. The Technical Description states that the EUT is a module, but only points 2 and 3 of the Modular Approval Document are specifically addressed. Is modular approval sought for the WLAN card, or is the EUT the entire tablet? If modular approval is, indeed, sought, then the remainder of points must be addressed. The Modular Approval Document is copied at the end of this email, for your convenience.

3. What is the gain of the antenna?

 Antenna gain = -0.28 dBi (max)

4. In the test report, the Table of Contents and Tables 2 and 3 all refer to Sections 15.247(g) and (h). This is not applicable to a direct sequence transmitter. Instead, they should list compliance with Section 15.247(d).

5. There is a ferrite core on the dc line of the power supply. It appears, from the test set up photo, that there is another ferrite core on a different cable, as well. What is it?

 USB Keyboard

6. The BW, output power and RF spurious emission plots are all illegible. Please submit new, legible plots.

7. What RBW was used to measure the output power? Is this value greater than the BW?

 RBW = 2MHz (max setting) less than BW.

8. Please provide data demonstrating compliance with Section 15.247(d) – power spectral density.

 Yes, under 15.247/ test data

9. Were any radiated spurious emissions in restricted bands (e.g., 2nd and 3rd harmonics) measurable?

 No,

Per FCC Modular Approval Public Notice ALL the following provisions MUST be met:

In order to obtain a modular transmitter approval, a cover letter requesting modular approval must be submitted and the numbered requirements identified below must be addressed in the application for equipment authorization.

1.   The modular transmitter must have its own RF shielding. This is intended to ensure that the module does not have to rely upon the shielding provided by the device into which it is installed in order for all modular transmitter emissions to comply with Part 15 limits. It is also intended to prevent coupling between the RF circuitry of the module and any wires or circuits in the device into which the module is installed. Such coupling may result in non-compliant operation.

2.   The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with Part 15 requirements under conditions of excessive data rates or over-modulation.

3.   The modular transmitter must have its own power supply regulation. This is intended to ensure that the module will comply with Part 15 requirements regardless of the design of the power supplying circuitry in the device into which the module is installed.

4.   The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The antenna must either be permanently attached or employ a "unique" antenna coupler (at all connections between the module and the antenna, including the cable). Any antenna used with the module must be approved with the module, either at the time of initial authorization or through a Class II permissive change. The "professional installation" provision of Section 15.203 may not be applied to modules.

5.   The modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another device during testing. This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207. AC or DC power lines and data input/output lines connected to the module must not contain ferrites, unless they will be marketed with the module (see Section 15.27(a)). The length of these lines shall be length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified or commercially available (see Section 15.31(i)).

6.   The modular transmitter must 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." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

7.   The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements. A copy of these instructions must be included in the application for equipment authorization. For example, there are very strict operational and timing requirements that must be met before a transmitter is authorized for operation under Section 15.231. For instance, data transmission is prohibited, except for operation under Section 15.231(e), in which case there are separate field strength level and timing requirements. Compliance with these requirements must be assured.

8.   The modular transmitter must comply with any applicable RF exposure requirements. For example, FCC Rules in Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine environmental evaluation for RF Exposure to demonstrate compliance. 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). Modular transmitters approved under other Sections of Part 15, when necessary, may also need to address certain RF Exposure concerns, typically by providing specific installation and operating instructions for users, installers and other interested parties to ensure compliance.