



American Telecommunications Certification Body Inc.
6731 Whittier Ave, McLean, VA 22101

November 7, 2004

RE: Research in Motion Limited

FCC ID: L6ARAR20CN

After a review of the submitted information, I have a few comments on the above referenced Application.

- 1) The label contains IC information. Is an IC approval desired on this application? Please confirm.
- 2) It is uncertain if the schematics also include the Bluetooth portion of the device. These could not easily be found. Please provide information regarding where this may be found in the schematics.
- 3) The schematics states there are 14 pages, while only 13 were provided. Please explain or update as necessary.
- 4) For the PC peripheral AC Power line emissions, it appears the device was only tested in the charging mode. This implies the device may have been powered down for these tests. Was the EUT capable of being powered on and TX data back and forth across the USB cable while charging while connected to AC power as well. If so this should be tested.
- 5) The limits on page 17 of the PC peripheral report appear backwards. Please review/correct as necessary.
- 6) Page 15 and 16 of the Bluetooth AC power line connected emissions show the average measurements around 150 kHz much higher than QP. Additionally the QP reading at 152 kHz appears strangely low given the plot showing peak measurements. It appears that the data for 150 kHz QP may not have been adequately captured. Please review.
- 7) Current FCC regulations for Dwell time under 15.247 use $0.4 \times \#$ of hopping frequencies as the time of investigation and not 30 seconds. Please correct this section of the Bluetooth report as necessary.
- 8) It is uncertain if the Frequency stability in the Part 22/24 report was measured at Battery End Point. Is the 3.5 V considered this? Additionally, the 4.2 V level is less than 115%. Please explain.
- 9) It is not clear what the units and purpose of the Antenna Loss factor are in calculations on page 38 for the Part 22/24 report. For instance you show a 7.8 dB antenna loss. If this value is the antenna gain of the antenna used during testing, then the conducted output power would be lower than necessary for using a dipole and would need to be added to the calculation, not subtracted. Note that even the sample calculation above the example shows to add the antenna gain which appears to be how it was corrected on page 42. It may be that this value could be for something else (leveling delta). Please explain/correct as necessary.
- 10) For SAR, the FCC requires the Dielectric Parameters to be $< 5\%$. The parameters for 835 MHz for Muscle do not meet this (page 12).
- 11) The users manual mentions to only use RIM approved accessories. The manual should not exclude 3rd party access. Typically most manufactures include a statements such as:

.....to maintain compliance with FCC RF exposure guidelines, use only RIM approved accessories or accessories that contain no metallic components and provide a separation distance of 1.5 cm to the body. Use of other accessories may violate FCC RF exposure guidelines and should be avoided.

- 12) The FCC requires that the output power measured in the SAR report be \geq to that reported in the EMC report. The conducted power reported appears to be lower in the SAR report. Please review.
- 13) Test photos should be provided for the 15 mm spacing configurations as well.
- 14) The FCC requires Validations to be performed each day of testing. It does not appear that validations were performed for testing done on days 10/25, 10/26, 10/29, 11/2, 11/3, and 11/4. Please provide this information.

- 15) From the tabular data, it does not appear that the headset was tested, although test photos appear to show it was. Please include headset data in the tabular data. Was the 15mm spacing tested with the headset as this was worse case body positioning?
- 16) The following could not be confirmed:
 - a) Distance between the measurement point (distance + offset) at the probe sensor location (geometric center behind the probe tip) and the phantom surface is < 8.0 mm and maintained at a constant distance of +/- 1.0 mm during an area scan to determine peak SAR locations
 - b) Was Probe boundary effect compensation used? If not then the probe tip should be positioned at least half a probe tip diameter from the phantom surface during area and zoom scans.
- 17) FYI.....Please be careful for future Part 15 PC peripheral tests to center the keyboard on the monitor per ANSI C63.4.
- 18) FYI.....The FCC grant is scheduled to be released 12/31/04.
- 19) FYI..... There are 2 requirements near the bandedge for 2.4 GHz DTS & DSS devices. First, all emissions outside of the band must meet the -20 dBc requirement which has been shown in the report. Secondly, any emissions falling in restricted bands must also meet the radiated peak/average limits of 74/54 dBuV/m. This does not appear to be shown for highest emissions falling in the <= 2.39 GHz and >= 2.4835 GHz restricted bands located near the bandedges. Please consider including Radiated bandedge data for the 15.247 requirements in future reports. However in this case the Bluetooth portion of this device can be determined to be in compliance from using far field equations to estimate a value and then applying correction factors for the 40+ dB bandedge deltas shown, as well as averaging factors for Bluetooth (> 20 dB).



Timothy R. Johnson
Examining Engineer

[mailto: tjohnson@AmericanTCB.com](mailto:tjohnson@AmericanTCB.com)

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information may result in application termination. Correspondence should be considered part of the permanent submission and may be viewed from the Internet after a Grant of Equipment Authorization is issued.

Please do not respond to this correspondence using the email reply button. In order for your response to be processed expeditiously, you must submit your documents through the AmericanTCB.com website. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the sender.