



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

November 3, 2004

RE: OQO

FCC ID: SHD-A4YWFS

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

- 1) The block diagram should show the frequencies of all oscillators in the TX portions (TX PCB's) of the device (CFR 2.1033(a)(5)), unless this portion of the device is an OEM part. Please provide either the block diagram for the TX portions (802.11 + Bluetooth), or alternatively provide a parts list that shows that these parts are provided by another manufacturer.
- 2) The Bluetooth module theory of operation mentions that it is capable of up to +6 dBm output power. Antenna information suggests only a -1 to -3 dBi antenna.
- 3) Given that the device was not TX fully during AC line conducted measurements, please explain what precautions were taken during the test to ensure any contribution of the TX to the emissions could be adequately detected and evaluated. Given the short duration of the link pulses and sweep times of measurement equipment and/or automated measurements (where applicable), it is easy to overlook emissions that may be caused by the TX during these tests if not continuously Transmitting. Additionally, QP measurements on any pulsed may not adequately indicate compliance compared to longer durations of TX. Also average measurements would be given an unfair benefit during the test that would yield different results during continuous TX. Please explain or provide new test data as necessary.
- 4) Please explain why the bandedge frequency (page 31 and 35 of 80) shows bandedge measurements made at 2439 MHz for the low channel. The restricted band for the low channel that is typically measured is the worse case results obtained in the 2310-2390 MHz band.
- 5) When the gain of the antenna is known, typically output power made using field strength calculations should use the known gain of the antenna to achieve a known conducted output power according to the FCC guidance documents. It appears that this was not done and the EIRP power calculated instead. Please correct or explain as necessary to the power given on pages 33, 41, and 57 as necessary.
- 6) Please provide the RBW/VBW/Span/Sweep time settings for the spectral density test shown on page 33 & 41 of 80. Note for future reference: It is preferred that these plots be provided in the report when possible.
- 7) Please provide units for the field strength for output power shown in the tables on page 33, 41, and 57 of 80.
- 8) Please provide units for the output power for output power shown in tables on page 57.
- 9) It is uncertain why the power spectral density, power, and 6 dB bandwidth appear to be tested twice for 802.11b. Please explain.
- 10) Time of occupancy should be calculated over  $0.4 * \text{number of channels used}$  (31.6 seconds in this case). Please correct as necessary.
- 11) Sufficient information to calculate dwell time in 31.6 seconds does not appear to have been provided. Please provide.
- 12) The labels on the plots on page 59 do not appear to match the information on the plots.
- 13) Bluetooth devices typically have 79 channels, not 75. It does appear that a few channels are not shown in the plots which may be simply from not enough storage time during the test. Please explain/correct as necessary.

- 14) FYI.....Many times a Bluetooth device can be approved using DTS rules. In this case, approval is being asked for and shown in the report to both DTS (802.11b) and FHSS (Bluetooth) and therefore this is considered a composite application. If the Bluetooth can be shown to meet the DTS regulations, a single grant would be issued and this would not be considered a composite application for FCC.
- 15) FYI...For RX emissions (page 29 of 80), only AVG data was provided. There is also a limitation of the peak data, 20 dB higher than the AVG limit. This data should be included.
- 16) FYI.....SAR Still under review.



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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.