



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

November 5, 2003

RE: Airespace

FCC ID: QTZAM1200ABG

I have a few comments on the above referenced Application.

General

- 1) Please provide a block diagram of the system.
- 2) The application is for an 802.11 A/B/G Radio, but the parts list only mentions A/B. Please comment/correct as necessary.
- 3) Given that the device may accept an AC adapter or POE power according to the users manual, the AC line conducted emissions should be checked to determine which method of supplying power is worse case. Only one set of data appears to be provided. Please provide further information regarding whether both modes of providing power were checked to ensure the worse case results are provided.
- 4) The external photographs appear to show standard screws for the access door which contradicts the fact that the end user should not have simple access to the antenna connectors located in the device to ensure compliance with 15.407(d). Please comment.
- 5) Please verify that the device has been properly tested to for Part 15, Class A limits as previously mentioned.

15.247

- 6) Information provide on the external antennas for 2.4 GHz shows gains up to 9 dBi, while the report mentions the gain of the external antennas are less than the internal antennas (2.4 GHz internal = 7.8 dBi). Please explain.
- 7) The values listed for power on page 23 of the 802.11b/g report appears lower than the measured power. Please provide an explanation.
- 8) Please provide an explanation of the high emissions seen below the fundamental on page 24 of the 802.11b/g report. This emissions could be seen as above the limit.
- 9) Several emissions given on pages 27-28 appear at odd frequencies. Any explanation? Are the plots and data reporting the correct frequencies.
- 10) The bandedge plots do not appear to follow the method given. Please review and adjust as necessary. (see QTZWNP1200B)
- 11) Please note that radiated emissions in restricted bands are considered to be any emission caused by the transmitter being turned on, not strictly the harmonics. This includes such emissions as LO's, intermod products, frequencies as part of any multiplication stages, etc. The plot on page 24 shows an emission that appears to fall in the 1550-1710 MHz restricted band, however radiated emissions only appear to be performed for > 3500 MHz. Please comment.
- 12) Since this is a composite application and each report (15.247 and UNII) gets uploaded only to their respective portions of the applications, compliance with conducted emissions should be shown for 15.247 and UNII reports. Note that both modes (UNII vs. 15.247) should have been checked during conducted testing to ensure there is little difference between the emissions, however only the worse case condition need to be reported.

UNII

- 13) Information regarding 15.407(g) mentions that the transmit frequency fundamental did not drift out of band. Please confirm that this includes all of the occupied bandwidth within 26 dB of the fundamental, and not just the center frequency.
- 14) The power measurement diagram does show the splitter and takes this into consideration in the calculations. However, the diagram does not appear to show the switch for the 5 GHz path. It is therefore uncertain if this was factored in as shown in the 2.4 GHz data. Please explain.
- 15) Based on how information was presented in the report for power, the RF exposure calculations may incorrectly forget to take into consideration the RF splitter and/or switch. Please review, explain and correct the RF exposure calculations if necessary.

- 16) The power measurements mention the use of method 3, while the plots appear to show method 2. Please clarify. Additionally, please note that method 3 stipulates 100 traces, while not all traces show this.
- 17) Due to the PSD measurements at channel 5260 MHz exceeding the +4 dBm threshold stipulated for the channels just below this point, please provide PSD measurements at the 5240 MHz channel to show compliance to the +4 dBm requirement.
- 18) Please explain if this device contains a "Turbo" mode of operation. If so, was this feature tested?
- 19) The bandedges (near 5.15, 5.35, 5.715, 5.835) shown on page 25, 28, 31, 33, 36, 39, & 40 do not clearly show compliance with the -27dBm/MHz EIRP limit. Please provide further data/information as necessary to show compliance at these edges. Note that compliance in the 10 MHz band just below/above 5725-5825 to -17 dBm/MHz EIRP has been shown.
- 20) Page 47 shows restricted bands. Please note that emissions above 38.6 GHz are also considered restricted bands.
- 21) Please note that radiated emissions in restricted bands are considered to be any emission caused by the transmitter being turned on, not strictly the harmonics. This includes such emissions as LO's, intermod products, frequencies as part of any multiplication stages, etc. Please comment and/or provide further data as necessary.
- 22) For emissions during radiated tests that did not fall in a restricted band, please denote appropriately to avoid confusion in the table (i.e. see previous report from QTZWNAP1200A). Additionally, emissions outside of the restricted bands should be compared to the appropriate limit, which in this case for -34.4 dBm/MHz EIRP appears to be 68.23 dBuV/m at 3 meters, not the Peak/Avg limits of 15.209.
- 23) Please define the RBW/VBW settings used for radiated emissions.
- 24) The conducted emissions state that the device was tested from 150 kHz to 30 MHz using the new EN55022 harmonized limits. The results shown are only around 25-30 MHz. Please confirm the frequency range tested.



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.