



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

July 19, 2005

RE: Pepper Computer Inc.

FCC ID: S5Y1234

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

- 1) It is uncertain where the Bluetooth circuitry is still located. Is this on a separate board or on the main motherboard? It is thought from the parts list that this is a supplied module as well. Please provide a closeup photograph of the top/bottom of this circuitry as well similar to that provided for the WLAN. Additionally, if integrated onto the main board, please provide a labeled photograph as appropriate to show this location.

FYI....Please note that the FCC always requires internal photographs of the TX for documentation purposes. They are necessary to document the circuitry as approved and allow identification of changes should there be a problem in the future. This is standard on all applications to the FCC, even if the TX is from another vendor.

- 2) Please revise the test report(s) regarding previous items 8 and 14 (from the first set of comments shown here).

PC 1 #8) Test methods listed in various reports mention ANSI C63.4 - 2001. Note that the FCC rules do not reference this but reference a 2003. Please ensure compliance with this version of the standard and update as necessary.

PC 1 #14) Some average measurements shown in the DTS report show a 3 Hz RBW. Note that the FCC as specified 10 Hz as a minimum. This should be review/corrected as necessary.

PC 2 #8) Some average measurements shown in the DSS report show a 1 Hz VBW. Note that the FCC as specified 10 Hz as a minimum. Additionally, the VBW must be > 1/Ton. From earlier duty cycle plots, this would mean that any average measurements would likely require an approximate 1 kHz VBW or greater. This should be review/corrected as necessary.

- 3) An updated 731 form as mentioned from previous Comments #4, 5, and 9 has not yet been received.
- 4) Further analysis of the DTS report shows that the PSD test does not meet the FCC requirement of sweep time must be > Span/3k. Please correct.
- 5) The test report provides information citing a 25% duty factor. For WLAN, the FCC expects testing to take place with as close to 100% duty factor during testing for SAR. To date, we have not seen an explanation of WLAN duty factor that has satisfied the FCC unless it is inherent to the TX protocol of the device (i.e, GSM timing, etc.) and even these have a much higher duty factor. Regarding the use of "test software" vs actual use for purposes of SAR testing, the FCC has recently investigated this in detail due to industries concerns and determined the following:
 - a) normal operating mode has unstable test conditions
 - b) transmit duty factor during normal use may not be easily quantified
 - c) burst duty factor & burst crest factor corrections need examination for affect on measurements
 - d) inconsistent test results likely
 - e) causes difficulties in review & approval

Conclusion: normal operating mode unsuitable for SAR testing and should not be used. Note that the FCC is currently working on new policies regarding 802.11 testing.

Note: To date, we have not seen the FCC accept normal data such as measured without asking for additional testing for a normal 802.11 devices. Given the recent information released it is unlikely that the FCC will feel any differently than in the past. Since TCB's must follow published guidelines and set methodologies, before we can accept the SAR as tested, the FCC's approval of the technique will need to be given. Given recent training, they will likely have concerns with pulse width & pulse repetition rates, SAR probe design & calibration procedures, probe sensor compression points, SAR system sampling times & integration times. This information will likely need to be compiled for an engineering review, and they are still likely to require retesting or require Certification by the FCC themselves. Alternatively retesting can be done using appropriate proprietary test software consisting of a 1 way passive transmission that is independent of network dynamics as we have seen done in almost all cases.

- 6) Additionally, a crest factor of 1:75 that appears throughout the report and also 1:25. Typically a 25% duty factor is a 1:4 crest factor, while a 1:25 would be 4%, and 1:75 would be 1.3%. Note that the software takes these figures and performs complex calculations on the raw readings, diode compression points, and other factors. We have seen that Errors in crest factor typically require retesting, however you specific SAR lab should be consulted for complete guidance.
- 7) Are there different types of batteries offered with/for this device. If so, SAR testing should have taken this into consideration.
- 8) The SAR report lists a conducted power of 15.6 dBm. However the EMC report does not show conducted power measurements. The FCC asks that we compare the values measured between EMC and SAR and ensure that the SAR is always $\geq$ to the EMC value and within 5%, especially in the case of 2 separate labs. Otherwise assurance that the device wasn't damaged, or behaving properly during SAR tests can not be assured. This can not adequately be assessed.
- 9) Based upon the above, a complete SAR review can not adequately be performed at this time.



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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.

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