



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

January 3, 2005

RE: Caterpillar, Inc.

FCC ID: PQMWCA1

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

- 1) Equipment type on the 731 form should be DTS.
- 2) Please list the maximum conducted power on the 731 (also see 6 and 7 below).
- 3) The users manual mentions a range extender antenna. However, testing was only done for one antenna. Please explain as the additional antenna is not covered by this application.
- 4) Please explain the use of 12 channels.....Most 802.11 devices are only approved for 11 channels in the U.S. and Canada. If this device can use more than 11 channels in other areas of the world, please explain compliance to 15.15 for the U.S. and Canada Versions.
- 5) Section 5 of the report mentions the digital device portion of the device is exempt. FCC policy has typically been this exemption applies only to devices that are mounted in such a way that they are part of the vehicle. Devices that are not mounted have typically not been allowed under this exemption. Please provide further information regarding this device being allowed under this exemption or the digital device data.
- 6) It appears that average power instead of peak power was measured. If so, then the guidance document (see attached) should be followed for average measurements. Alternatively peak power measurements may be provided.
- 7) If average power measurements are provided, then the limits for section 6.6 become 30 dB instead of 20 dB. Please review/correct as necessary. Note that the lower bandedge only shows 20.6 dB margin at 2.4 GHz.
- 8) Given the bandedge plots and the high side lobe around 2.385 MHz, the output power, antenna gain, etc., it is uncertain how the side lobe at 2.385 GHz meets the 54 dBuV/m limits. Also the data only appears to be measured at 2.39 GHz. It may be possible that the plots shown are overloading the spectrum analyzer, as the fundamental to sidelobe are only around 35 dB. Note that most 802.11 devices have > 50 dB rejection at the sidelobes. Please provide better data/information to support compliance in the restricted band occurring < 2.39 GHz. Also please note that even if this result appears to be marginal, any range extending antenna may be likely to be out of compliance. Measurements must be made on the highest point .
- 9) REL Listing letter for IC portion of the application appears to be missing.

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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.