



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

February 1, 2007

RE: GRAND MATE CO., LTD

FCC ID: UMP650

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

- 1) FYI.....All Administrative issues have been satisfied.
- 2) Now that all limits have been corrected to meet 15.231 levels, the test data can be adequately understood. However, please note that the levels/limits of 15.231 are applicable only for frequencies that do not fall in restricted bands. Frequencies that fall in restricted bands (i.e. 15.205 – such as 1260, 1575, 2205 MHz) must meet 15.209 levels (74 – peak and 54 average dBuV/m). Please correct.
- 3) The test data shows a 30 – 40 dB variation between peak and average data. Data is much different than expected and it appears that something may be incorrect regarding this measurement. Please note that averaging of an FSK signal is typically on the order of only a few dB (less than 10 dB, with 3 – 6 dB typical). Additionally to use an average detector would require that the signal is fairly constant (i.e. continuous) and that a VBW used is $> 1/\text{Ton time}$ (i.e. $\text{VBW} > 1/28 \text{ msec} > 40 \text{ Hz}$) such that averaging is only being applied to the time that the TX is on (i.e. no benefited by on-off periods). Note that additionally the test report still cites a 10 Hz VBW was used. It appears that the average measurement is not adequately taken. The concern is that the peak to average difference is expected to be only a few dB, and if properly measured the data suggest that the average measurements may be over the limit. Note that generally a “pulsed” emission is subject to 15.35 requirements and the average is actually calculated and not measured. Using a mathematical calculation of the duty factor shown here would allow less than 3 dB correction. Given the variance of results from what is expected, the timing plots shown, and page 8 of the report that mentions FSK modulation, it is uncertain what the actual conditions of the fundamental is. Is this FSK, pulsed, both, etc? All this will affect what method(s) will be allowed for averaging measurements. Generally a true continuous FSK signal is subject to AVG detector, while pulsed emissions are subject to calculated results. You may wish to discuss with Bill in the Taipei office to adequately understand how averaging will be allowed in this case. However please note that both the calculated and expected averaging on this transmitter appear to likely have a concern meeting the average limits.

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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.