

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

December 20, 2004

RE: FCC ID: OWDTR-0037-E_ATCB002019

Attention: Rick McMurray

I have a few comments on this Application. Please note that further comments may arise in response to answers provided to the questions below.

1. Please note that occupationally source-based time-averaged values are generally done at a 50% duty cycle value. However, the manual states a 60/40% duty cycle. Please explain why the manual uses a non-standard duty cycle.

Response: This is a Data-only RF MODEM radio product. The reason for the duty cycle that we specified, i.e. 60% TX and 40% RX, is because that is theoretically the highest percentage TX that can be achieved. This is message-size dependent, with worse case representing an unending string of data being transmitted as fast as the trucked radio protocol can package it and transmit it. Any reduction of this theoretical maximum data throughput, be it time for system responses, breaks in the data source stream, or other pauses, necessarily would reduce that average TX time.

2. Please note that this device is stated in the manual as a controlled rf exposure environment. The MPE indicates that uncontrolled environment was used to produce the calculated 21cm separation. Please note that as this device is a controlled rf environment the MPE calculations for this device show a safe distance of about 8.6cm using a 2.14dBi dipole antenna. Please explain why the MPE report uses uncontrolled limits for a controlled environment device. Why was MPE measured and not simply calculated? Please report MPE using the correct rf environment limits etc. for this device.

Response: a) Product application is an occupational/controlled environment, but MPE has been reported for general population/uncontrolled environment, providing a worse case value, and used as such in the User Manual. This will allow potential future application expansion without further MPE testing, if the occasion arises. Please note that this information was presented in the cover letter uploaded with this application.

b) MPE was measured because this device operates in the Specialized Mobile Radio Service. Per 2.1091(c): "Mobile devices that operate in the ... Specialized Mobile Radio Service authorized under ... Part 90 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if they operate at frequencies of 1.5 GHz or below and their effective radiated power (ERP) is 1.5 watts or more ..."

3. Please provide a sample of your calculations for radiated spurious emissions. The numbers provided do not seem to match your provided formula for data shown on page 14 of the report. Perhaps the error is in rounding off numbers. In any event please provide a sample calculation using the provided values will clear the issue up.

Response: The limit of 47.84 (47.843) was calculated from $43 + 10\log(3.05)$, and the cable loss was listed at 1.6, but 1.62 was used in the actual calculation. Discrepancies are due to rounding. Please see the following page for a sample calculation.

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For example, the calculation for 1632 MHz:

Corrected signal generator level (dBc) = conducted power – (signal generator level – CL + antenna gain)

34.85(dBm power) – (-57.4 -1.62 +4.9) = 88.97 dBc (rounded to 89.0)

Margin = limit – corrected signal generator level

47.85 – 88.97 = -41.12

Dennis Ward
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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.