



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

May 27, 2004

RE: FCC ID: NKRCM9_ATCB001355

Attention: James Cheng / Daphne Liu

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 the operational description and the installation manual states that the mini-PCI adapter is for use in notebook computers. Please note that in reviewing the photos of the antennae and cables, it does not appear that the antenna cables would be long enough to provide a minimum 20cm separation between the antenna and the user. Please note that for modular approvals all antennae with their cabling must be tested and comply with the rules. Please note that it appears that the cables and antennae shown in photos EUT-3 and EUT-4 do not meet this requirement. Please note that the antenna and cable shown in EUT-3 is less than 18cm and the cable is less than 15cm. The antenna and cable shown in EUT-4 is only 17cm total length and the cable is only 13cm long. Neither of these configurations show they provide the minimum 20cm separation distance that would be required. As this device can only be used in a mobile rf configuration with a minimum 20cm separation distance you must show how the antenna cable and antenna can reasonably be placed 20cm from the users body. I do not see how this is possible using the above antennae. Please explain and provide evidence of sufficient cable length to provide a minimum 20 cm separation in a notebook configuration.
2. Please note that your operational/technical description did not include the mandatory explanation of how you meet the automatic shut off requirements of 15.407(c). Please provide this information or please point to where in the application documentation this information exists.
3. Please note that out of band emissions for 15.407 devices above 1GHz and band edge emissions are EIRP limits. It appears that you have field strength data to compare out of band emissions to the 15.209 limits. Please note that this is not correct as 15.209 limits only apply to frequencies below 1GHz. For frequencies above 1GHz 15.407(b)1,2 or 3 apply. For example, on page 37 of report "04lr018fc PART1.3.pdf" you show a corrected dBuV field strength of 49.45. The technical documentation states the gain of this particular antenna is 4.87dBi in the 5GHz range. Finding EIRP for this field strength would be $EIRP = (Ed)^2 / 30G$. The resulting EIRP for this level is -50.6dBm. It is this number that must be mandatory -27dBm EIRP out of band limit for UNII devices. Please provide proper EIRP values and compare this to the proper EIRP limit of -27dBm for out of band and band edge compliance. This applies to all reports.
4. Please note that band edge compliance is an EIRP measurement, not an average nor a field strength measurement. Please show compliance at the band edges using the proper EIRP limits.
5. Please note that in the radiated emissions test data for the 15.247 WLAN you have not indicated what detector function was employed on specific readings. Please clearly identify the detector function for each reading. If the readings are average, please include the peak readings showing compliance to the mandatory 20dB over the average limit (i.e. 74dBuV/m) in the restricted bands. If the readings are peak, please clearly state this in the tables. Alternately, please show in the reports where it is clearly identified what each radiated spurious emissions data is. This applies to all reports.
6. Please note that UNII devices operating in the 5.15 to 5.25GHz band must have an integral antenna. Please note that as the FCC has stated that even if the connector is unique, an antenna used with UNII devices in these bands cannot be able to be removed by the end user, the following antennae do not meet the integral criterion set by the FCC for the UNII 5.15 to 5.25GHz band: antenna mentioned in the file "antenna 5.1 srsr2400mra.pdf", antenna mentioned in antenna file "antenna 5.2 SRSM2400MRAMO_AA.PDF", antenna mentioned in file "antenna 5.3 rsm5150mra.PDF", antenna mentioned in file "antenna 5.4 SRSM5150MRAMO_AA.PDF", the antenna mentioned in file "antenna 6 WNC DBA-BSMA-01 +jump cable Antenna report-040429.pdf" and the antenna mentioned in the file "antenn 7 WNC DBA-SSMA-01 +jump cable Antenna report-040429.pdf". As these antennae appear to externally connect to the host that

would be involved, they cannot be used in this Band. Please explain and provide evidence that these antennae cannot be removed from the host by the user or please remove these antennae from the list of UNII antennae. Please make it clear in the installation guide that any antenna used in the UNII band mentioned must be integral and cannot be made removable by the user.

7. FYI – the only antennae tested for this module that appears to meet the integral antenna requirements are antennae 1, 2, 3, and 4. All other antennae clearly appear to have a connector that allows them to be removed by the user. This is not allowed for 5.15 to 5.25GHz UNII devices. Please resolve this issue.



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.