



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

July 3, 2002

RE: Malibu Networks

FCC ID: QQQ-AM241

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

- 1) Please upload an exhibit for the operational description of the device.
- 2) Two different models appear to be covered by this application, while only one unit was tested. Please provide detailed information regarding the differences between these models.
- 3) Please upload an exhibit for the external photographs of the device (please include photographs of the antennas as part of this).
- 4) Please note that section 4(a) of the 731 form should list either DSS or DTS as appropriate for this type of product.
- 5) The test report mentions that there are 2 antenna (12 dBi Omni and 19 dBi panel antenna). The report also mentions that lower gain antennas may be used. Please provide a list of all planned antenna's including type, gain, and antenna connector style of each. Please note that the manual only mentions 4 specific antennas.
- 6) Please provide a block diagram of the system as tested for radiated emissions. What was the cable lengths between the EUT and the antenna? Is this length always set, or is it variable?
- 7) Currently TCB's are only authorize mobile classification spread spectrum transmitters in the 2.4 GHz band with both a peak conducted and peak radiated (EIRP) output power not exceeding 200 mW (see attached exclusion list). The EIRP of this transmitter with the + 12 dBi Omni & +19 dBi Panel antenna is greater than 200 mW. The FCC is currently working to change or eliminate many of the restrictions on TCB's and the latest information we have from the FCC is that they hope to publish this information shortly (see attached email regarding status of this). Options available for handling this application currently are:
 - a) We can go forth and review the application in completion (considering the antenna's as mobile), but will have to wait until the FCC releases the changed exclusion list before we issue the grant due to the RF exposure limitations currently imposed on TCB's.
 - b) If certain configurations that exceed the 200 mW EIRP limitation can be considered as fixed instead of mobile (distance of 2 meters between antenna and user instead of 20 cm), then we may be able to go ahead with the application now with adjustments to the MPE calculations and users manual to cover both mobile and fixed installations. If this route is selected, it will affect the suggestive use of certain MPE exhibits and the users manual information given here. Also note that if lower gain antenna's are to be used, then distinguishing information must be provided in the users manual for all types of antennas used (see #5 above as well)
 - c) If time source based averaging can be applied this may be an additional option for still qualifying under mobile use. However this will depend on the worse case duty cycles inherent to this device and may be complicated to determine.
 - d) Resubmit the application to the FCC.
- 8) Please provide information to show compliance with the antenna requirements of 15.203. Professional installation must be used if standard connectors are applied (i.e. use of a standard connector is not allowed if professional installation "may" be required or a possible option). Please note that professional installation will require a cover letter addressing the following 3 points:
 - a) Application (or intended use) of the device
 - b) Installation requirements
 - c) Method of marketing the device.

Question 9 & 10 as follows are related depending on how the device is classified

- 9) The label on the EUT displays both the FCC ID as well as the FCC Logo. The use of the FCC logo and the phrase "for home or office use" (for products authorized under Part 15) is reserved for products authorized using a Declaration of Conformity route to compliance. Has this device also been properly tested (as given by ANSI C63.4) as a class B computer peripheral and a test report issued by an accredited test facility? If the device has met with these requirements, also please provide the DoC Statements required by 2.1077 which should be contained on a single page included in the manual or with the product and adjust the labeling information in the users manual to the information given in 15.105(b).
- 10) The users manual states that the device has met with Class A emissions. However the detailed product information shows residential/SOHO at one point. If the device has met with Class A emissions only, then the label should have the FCC logo and the phrase "for home or office use" removed. Also, a justification as to Class A use only should accompany the application that explains why the device will not be used in a residential area.
- 11) The test report states "Schematics, block diagrams, and algorithm descriptions subject to enclosed confidentiality statement". The confidentiality letter only lists schematics, block diagrams, and parts list. Please clarify which exhibits are to be held confidential and correct the confidentiality letter if necessary. Please note that the test report may not be held confidential and that any other information contained within the test report that might be considered confidential (i.e. detailed product description) should be removed from the test report and provided in a separate exhibit.
- 12) The test methodology (page 8 of 39) given in the test report states that the power output was measured with a power meter, however the data given on pages 12-14 appear to be from a spectrum analyzers. Please comment. Note: All of the power output results match the information contained in the plots, except 1 which is off slightly.
- 13) The power output tested should be performed with the RBW set to greater than the 6 dB bandwidth of the emissions. Since this is not possible on most spectrum analyzers, either a peak power meter should be used, or the power integration function as contained in most modern spectrum analyzers to measure the output power. This will likely affect the power measurements results (test data, RF exposure, 731 form, etc.).
- 14) From antenna conducted test data provided it appears that spurious emissions may occur within the restricted bands 1660-1710, 1718.8-1722.2 which could be higher than the harmonics measured. However the radiated test data does not show any measurements around these frequencies. Please comment.
- 15) Radiated emissions at 7232 MHz (run 1a) do fall in a restricted band. The limit applied is not correct and the reading appears over the limit. Also the note given on this table does not seem applicable to this measurement. Please explain.
- 16) The plot for the bandedge for the 19 dBi panel antenna at 2.390 GHz (page 37 of 39), appears to show the marker measurement made right at the bandedge. Please note that this measurements should be made to the highest emission in the restricted band region outside the bandedge. It appears that there may be 2 spurious emissions higher than the measurement made at the bandedge. Please comment.
- 17) Since power output levels will affect compliance of the unit with the FCC's rules, explain what precautions are built into the system to keep the end user from adjusting the power output levels. For example adjustment of this feature is only allowed by passwords used by the installers, etc. (reference 15.15(b)).
- 18) Please add information to the users manual that easily shows each antenna and its associated maximum power value settings to be used. This may be done through an installers worksheet, or a simple matrix showing all antennas.



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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.