



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

June 26, 2005

RE: ASUSTek Computer Inc.

FCC ID: MSQV66

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

- 1) Please correct the various items on the 731 form:
 - a) Section I - 3(a) and 3(b) must list the FCC ID to be Certified. Please correct.
 - b) Section II - Please fill in correct address for ATL or the appropriate company in section 2(a).
 - c) Section III - Section 6 of the 731 form must be filled in for (a)(b)(c)(d). For Part 22, (a) would be listed for ERP. For Part 24, (b) would be listed as EIRP. Additionally, please fill in Section 4(a)/(b), 7, 8, or 9.
 - d) Section IV must be filled in as appropriate.
- 2) Confidentiality is given under section 0.456 and 0.459 of the FCC rules, not Part 15 and 24. Please correct the confidentiality letter as appropriate.
- 3) The block diagram should include the block diagram of the RF portion of the device. Please update/provide as necessary.
- 4) It appears that complete internal photographs have not been provided. The top and bottom of all boards must be provided. Additionally, photographs showing beneath all subshields should also be provided. Please provide.
- 5) It would be recommended that the operational description and BOM also be added to the confidentiality letter. If this is desirable, please provide an updated confidentiality letter that included these items.
- 6) The parts list appears incomplete and only lists some of the RF components. Please provide a complete parts list.
- 7) The schematics appears to contain most of the RF portion of the device, but appears to be incomplete through to the baseband portion of the device. Please provide further schematics as necessary.
- 8) For the tune up procedure by the manufacturer, please explain whether power is measured radiated or conducted. It is hard to achieve the necessary accuracy if this is measured in a radiated fashion. Please explain.
- 9) Please provide a separate test configuration photographs exhibit.

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- 10) This device is capable of connection to a PC and is therefore also considered a PC peripheral device (in addition to the TX requirements, i.e. Part 24, etc.) and is subject to either a Certification or DoC as a PC peripheral. Therefore the application must clarify if you are asking for:

- a) Certification of the device as a TX, and a DoC has been performed by an appropriately accredited test lab for a PC peripheral
- b) Certification as a TX + PC peripheral.

Note 1: The option b) would be considered as a composite application and 2 certificates (one for the TX, one for the PC peripheral portion) would be issued. Note that there are additional review costs associated with this additional certification.

Note 2: To qualify to perform DoC applications, the test lab must be accredited (i.e. NVLAP or A2LA) to perform testing under the DoC procedure.

Note 3: Note that for DoC tests, the device is configured with a minimum test configuration as specified by ANSI C63.4 which includes complete computer + 2 I/O devices attached (one may be the EUT) during this particular test. Information appears to be provided that supports this.

Note 4: Each path (DoC or Certification) has particular labeling requirements that must be followed. For DoC authorizations, the label should also include specific DoC labeling information and also the users manual should include information regarding Part 2.1077. If the device is Certified, the FCC ID and current labeling requirements for the TX will cover the labeling requirements. However, additional grants are generated and review costs are higher. Currently labeling and users manual DO NOT support a DoC Authorization.

The manufacturer does have a choice of DoC or Certification, however the device labeling must match the appropriate methods used.

- 11) If this device is being approved under a DoC, then all the information required by 2.1077 must be placed on a single page in the users manual.
- 12) FCC ID specified within the users manual does not match this application. Please correct.
- 13) Page 66 of the users manual mentions a 20 cm spacing which is not applicable to this device and should be removed. Please correct.

Part 24 Review

- 14) Please provide both the DC voltages and currents applied into the several elements of the final radio frequency amplifying device for normal operation over the power range. If this is already in the application, kindly point to where this information may be found.
- 15) Minimum Passing Margin on page 5 of the Part 24 report does not appear correct. Please review.
- 16) ANSI C63.4 does not actually apply to the Part 24 report. Appropriate standards should be listed as EIA/TIA 603 standards. Please review/correct as necessary.
- 17) Where possible, the conducted power should also be measured and documented in the Part 24 report. Please provide.
- 18) Please explain the column "EUT Power Value" on page 10 of the Part 24 report. This column does not appear to be conducted power and other possible uses for this column do not appear to fit the data provided. Please explain as necessary.
- 19) On page 13 of the Part 24 report, some correction factors are negative, others are positive. It is believed that all of these should all be the same sign. Please review.
- 20) The plots on page 16, 19, and 22 do not appear to show a high fundamental carrier as expected (i.e. close to 29.2 dBm as specified by the tune up procedure). Note it appears that

the sweep time may have been inadequate (too fast) to adequately capture the emissions. Please review/correct/or explain as necessary.

- 21) For frequency stability tests, please confirm that the device was soaked between temperature settings of adequate time to stabilize both the device and chamber. A soak time (after chamber reaches appropriate temperature) of 1 hours is considered normal.
- 22) Page 22 appears to shows some other spurs of interest other than the fundamental and base station that were not reported. Please review.
- 23) 99% power bandwidth does not appear to be measured based upon below the transmitter power (maximum conducted power – 29.1 dBm as specified in tune up procedure). I have attached an document that helps explain this testing better.
- 24) It is uncertain if the cable loss and power divider loss were factored into the plots of page 45 and 46. Please explain. Also, are higher resolution plots for this test available. If so, please provide.
- 25) FYI....Please note that although we accept jpg images, the preferred file type is still considered pdf documents. This decreases processing time, files sizes, viewing problems, and problems with uploads to the FCC site. In the future, please consider providing images in pdf files.
- 26) FYI....More equipment than expected have calibration cycles > 1 Year. Although Calibration cycles of > 1 and up to 3 years are possible, it is typically only for equipment that is expected or has shown to change very little over time. For instance, most labs place Bi-log and spectrum analyzers on 1 year calibration cycles. Depending on the use of this equipment, it may be suggestive to adjust these cycle to 1 Year.

SAR Review

- 27) The tune up mentions 29.2 dBm (840 mW), while the maximum power measured in the Part 24 report was 740 mW. Please explain.
- 28) The SAR report page 3 mentions a 29 dBm conducted measurement which equals 794 mW. However the power listed next to this cites 870 mW. Please explain the difference. What was measured? Additionally, please note that conducted measurements should also have been performed and shown in the Part 24 report. The FCC asks that we review power cited in the theory of operation, tune up procedure, EMC report and SAR report. Additionally, they require that a) Powers in SAR report must agree with EMC report and tune-up procedure and b) Conducted power in SAR report should be greater than or equal to what's in EMC report, but not exceeding tune-up/tolerance. If conducted powers are not shown in the Part 24 report as well, this can not adequately be determined. Also note that power measurements cited in the theory and SAR report appear somewhat inconsistent. Please review/correct as necessary.
- 29) Please provide a list of any manufacturer body worn supplied accessories for this device (holsters, etc.). Additionally, please explain if there are there any manufacturer offered accessories for use with this device which may affect SAR (battery options, etc.). Please explain.
- 30) The statement of compliance on the bottom of page 3 of the SAR report should also cite compliance with FCC RF exposure requirements as required by §2.1093.
- 31) When information reported in the users manual reports SAR values, it should match the SAR values measured. Please correct the users manual to report the correct SAR values.
- 32) Liquid parameters must be measured each day of testing as a minimum, or more were high conditions of evaporation or low humidity exist. It appears that parameters were only measured on October 2004.
- 33) FYIPage 18 and Table 2 only appear to mention an 1800 MHz dipole. Although in the past the FCC has stated verification frequency(s) must be within ± 100 MHz of device center frequency(s), most actually provide this at 1900. It is recommended to use this for future applications.
- 34) The report only mentions 1800 MHz Validation equipment, but it appears the validation was done at 1900 MHz. Note this would not be allowed as the resonance of the equipment at the different frequencies is unknown, expected values are for correct dipole and medium, etc. Note the paragraph on page 19 mentions 1800. However the data tables on page 19 and plots support 1900 MHz using 1800 MHz equipment.
- 35) In the future, please consider placing larger test configuration photographs (1-2 per page) in the report. The current photographs are smaller than desired.

- 36) Some SAR plots show secondary hot spots. In these cases, both hot spots should be checked to ensure worse case was measured.
- 37) Liquid parameters given on SAR plots do not appear to match information in previous tables regarding liquid parameters measured. Please review. Additionally, these parameters should have been measured the day of test. It does not appear this was the case.
- 38) The FCC asks that Ambient and liquid temperatures be placed on all plots. This does not appear to have been done.
- 39) Test Report should document:
 - a) report probe tip distance to phantom inner surface
 - b) that the distance between the measurement point (distance + offset) at the probe sensor location (geometric center behind the probe tip) and the phantom surface is < 8.0 mm and maintained at a constant distance of +/- 1.0 mm during an area scan to determine peak SAR locations
 - c) if probe boundary effect compensation is used or not. If not the probe tip should be positioned at least half a probe tip diameter from the phantom surface during area and zoom scans.



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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.