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

April 29, 2003

RE: Nokia, Inc.

FCC ID: GMLRH-40

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

EMC Report/General:

1) The top/bottom internal photographs of the main board are too dark to distinguish the components. Please provide clearer top/bottom photographs of the main board.
2) There is conflicting information regarding the frequency and modes of operation for this device throughout this application. Please help clarify the following by providing new exhibits or explanations as necessary:

    a) The device appears to be a single-band, dual mode phone according to the theory of operation. However the 731 form section 4(a) states a dual band, single mode phone. Additionally, only AMPS information appears to be given on the 731 form, while the application also appears to support additional TDMA functionality in the 800 MHz band.
    b) The test reports (page 5 of 32) says the tuning bands include 1850-1909.92 while the 731 form only shows 824.04-848.97. However, other information suggest only operation in the 800 MHz band. If the device is capable of tuning to the 1.8 GHz range but will not be manufactured for operation in this range, please provide an explanation as to how the end product will not be capable of transmitting/receiving in this band and how it will be disabled such that the end user can not activate this functionality.
    c) Information in the users manual, page 105 mentions operation in the 1850.04-1909.92. However the remainder of this application does not appear to support this.

3) The labeling exhibit must include a photograph or drawing showing the placement of the label on the device. Please provide a corrected exhibit which includes this.
4) The List of active Components listed in the Confidentiality letter does not appear to have been provided. Please provide.
5) Please provide information regarding the DC voltages/currents applied into the several elements of the final radio frequency amplifying device for normal operation over the power range as required by 2.1033(c)(8).
6) Please provide information regarding the description of all circuitry and devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation, and for limiting power as required by 2.1033(c)(10).
7) Please provide modulation limiting, frequency response of audio low pass filter, and transmitter audio frequency response as required by 2.1047. Please note that this information is still required as given in Part 2, even though specific requirements specified in Part 22 have recently been removed from the rules.
8) Please provide necessary bandwidth calculations using Carson's Rule for AMPS and occupied bandwidth measurements to show necessary bandwidth for TDMA.
9) The temperature chamber listed in the report appears out of calibration, please comment.
10) FYI. The power listed on the 731 form should match the power as specified by the limits (i.e. conducted, EIRP, ERP, etc.). For Part 22 the limit is specified in ERP, therefore the power on the 731 should be listed as the ERP power measured via the substitution method.

SAR Report:

11) The SAR reports mentions 2 model BLC-2 batteries, while the users manual does not mention the second model. Please explain.
12) The conducted powers given in the EMC/SAR report should not exceed those specified in the tune-up procedure or theory of operation. However, the maximum conducted power for AMPS appears to be greater than that specified in the tune up procedure by 0.3 dB. Please explain.
13) Please explain the use of the 835 MHz dipole only for the body verification and use of the 900 MHz for the head verification. Why wasn't 835 MHz dipole used for both?
14) Conductivity must be within 5% of recommended values. Please note that conductivity tested on 2/26/03 exceeded this value in the SAR reports for the BOM 1 & BOM 2 (page 9).
15) From the photographs it can not be determined if the device holder surrounded, enclosed, covered, or obstructed the internal antenna. Please explain and provide additional photographs if possible.
16) Please provide the original plots for each of the Z-Axis plots provided (i.e. the original plots for the 2 TDMA Z-axis plots which appear to have been performed on a different day were not provided). Note that not all information is provided on the Z-Axis plot (i.e. Powerdrift).
17) Review of the users manual lists multiple accessories (LPS-3 Inductive Loopset, HAD-9 TTY Adapter, HDC-5 Headset, HDE-2 Headset, HDB-5 Headset, HDC-10 Headset, and CSM-6 leather clip case.). However it appears that only the HDE-2 Headset was tested. Since not all combinations have been tested, a justification must be made as to the determination of the worse case configuration(s).
18) The users manual mentions an accessory CSM-6 case with clip. However, it is not certain whether the clip portion of this device contains any metal. Please explain if this accessory contains any metal. Note that all belt holder accessories containing metal must be tested.
19) Plots should list both liquid and ambient temperatures. It appears that only the liquid temperatures were provided.
20) For course scans, what was the probe tip distance to phantom inner surface?
21) The Z-axis plots provided in the report only confirm a 3-4 cm liquid depth. The FCC likes to be able to confirm that the 15 cm liquid depth was present by supporting photographs or Z-axis data which shows this depth. This was not provided for the actual test. Please confirm that the liquid depth was at least 15 cm.

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Examining Engineer

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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.