7th February 2003

Mr. Robert Paxman

Intel Corporation
2300 Corporate Center Drive
Thousand Oaks, CA 91320

Reference FCC ID: E2K24CLNS

Dear Mr. Paxman,

Enclosed are the responses to the questions set by Mr. Dennis Ward ATCB. I have only answered the questions, which address the areas of the project executed by APREL Laboratories.

Question 4.
Page 15 states that conducted power was 17.6dBm, page 3 says 17.8dBm. Please make documentation consistent.

The maximum conducted power, which was assessed by APREL Laboratories, was measured at 17.8dBm, which was measured on the Mid and High channels for the device(s) tested. A conducted power measurement of 17.5dBm was measured for the low channel. Depending on the channel where the conservative SAR was measured the power level changed. The table located on page 15 of the SAR report should have shown the average conducted power measured for all channels after correction. This value should have read 17.7dBm. It must be noted that this table is provided to show no power drift was measured during the experimental analysis. The statement on page 3 of the SAR report is correct, where the maximum measured conducted power for the device tested was 17.8dBm.

Question 6.
Please note that the SAR report contains hand SAR testing. Since there is no approved FCC approach to this sort of SAR, this data needs to be removed from the report. Please report Body SAR only.

It is the understanding of APREL Laboratories that the term Hand SAR has been replaced with the definition of Direct Contact SAR. Direct Contact SAR deals with analysis of extremities, and as the hand is classed as an extremity the reported 10g average values are necessary to prove conformance for the device(s) tested. I would recommend that you request from the ATCB audit engineer an official FCC public release where it is clearly stated that “Direct Contact SAR” is no longer required to prove conformity of a device tested. It is the opinion of APREL Laboratories that by removing the results in question the FCC will be in a position to with draw or suspend the grant as issued until the data is provided.

Question 7.

On page 4 of the SAR report you state that the max SAR with only the WLAN transmitting, the SAR was 1.16w/kg. Then you state that with both the WLAN and Bluetooth transmitting simultaneously the SAR was 0.94w/kg. The explanation only states that you performed additional testing. If both devices were transmitting at maximum power and since the manufacturer has stated that the antennae for both devices are separated by more than 20cm (thus no collocation) I would expect that the SAR would be about the same, but certainly not decrease. This decrease can be for a number of reasons. One primary cause may be power. Please verify that the power of each device during this test was at maximum and that the power of each device was not adversely reduced due to simultaneous operation. If power was reduced, please provide how this is part of the normal operation, or alternately, provide an explanation of the decreased power. (See also Neweb antenna SAR report)

For both of the experimental analysis exercises executed by APREL Laboratories (both SAR reports) it was not possible for conducted power measurements to be made on the Bluetooth device. APREL Laboratories recommend that the conservative SAR measured, which represents the analysis made on the 802.11b module, be reported in the grant. As a lower value was assessed while the Bluetooth and 802.11b module were transmitting at the same time the term “Conservative” does not apply and as such would not be acceptable for the FCC. As the conservative SAR value has been recorded and reported APREL do not see the need for additional analysis or explanation as to why lower values were assessed. Where the lower number was to be used in the grant then it would be acceptable for a request for additional data to be presented (where this recorded value is not termed as conservative). It is the understanding of APREL Laboratories that the “Conservative” assessed SAR value of 1.16 W/kg is to be used on the grant.

Question 8.

Please note that SAR measurements are to have power drift included in the data for each plot. I cannot find power drift information on the plot or plot data sheets. Please provide the required power drift information on the plotted data.

The following paragraphs should have been included in both reports on page 15.

The device was set to transmit for a period of 30 minutes (exceeded scan time) and conducted power measurements were made at 5-minute intervals to gauge power drift. Over the course of the 30-minute period no power drift was measured.

The same process was executed as above while the Bluetooth device was set to transmit and the power was assessed, no power drift was measured.

The table on page 15 for both SAR reports indicate that no power drift was measured throughout the assessment process. In future applications APREL Laboratories shall repeat this information on the plot data pages.

Question 9.

Page 26 and 36 of the Hitachi SAR report (Product Data) says the transmit power was 1 Watt. Is this the EUT power? Please explain what this 1 Watt is referring to.

The transmit power for the device was not 1Watt. This value reflects the normalised power value for the system validation, and is a field, which should be updated by the metrology engineer who executed the analysis prior to the start of the assessment process. This 1W value has no effect on the measurement process or the results. The value recorded is a result of the test reports generated by the system, and cannot be changed.

Question 10.

On pages 27, 30 graphs you state 10gSAR, yet the table at the bottom shows 1g SAR. Please be consistent in reporting values. Please explain and/or correct to show the appropriate units.

This seems to be an error with the generated PDF document, it has been checked against the original word document and a new version shall be issued.

Question 11.

The validation scan information is ambiguous. Please provide a general description of the "formal validation" procedure and the dipole used. Please include manufacturer / calibration reference dipole data and the actual dates the validation was performed (this needs to be on the validation graph page also).

Section 5.2 of both SAR reports state that the validation exercise was executed in line with the requirements of IEEE P-1528. IEEE P-1528 is still in draft format and will be voted on within the next few weeks, because of this APREL have not included the informative validation text from the standard in our reports, but will do so upon release of the standard. The validation protocol, which is described in P-1528 and is required by the FCC has been followed. It is a requirement that a full system validation be executed prior to any experimental analysis being executed, and that if the analysis period exceeds 24 hours a secondary validation assessment should be executed. When the period of assessment exceeds 24 hours a secondary assessment is ran by APREL. As this was not the case APREL feel that the information contained within both SAR reports is enough to prove conformity to the requirements of both P-1528 and FCC Supplement C. The engineer who executed the assessment has attested to this fact on page 20 of the final report.

APREL have noted that the TCB reviewing the grant application for FCC ID: E2K24CLNS have required information, which has not been requested by previous TCB or FCC reviewing engineers. The new requirements have been acknowledged and where appropriate will be included in future SAR reports. Other requests made by the TCB which APREL deem unreasonable shall be submitted to the FCC for verification of the requirement.

Regards,

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