



NEBRASKA CENTER FOR EXCELLENCE IN ELECTRONICS

4740 Discovery Drive
Lincoln, NE 68521
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28 July 2003

FCC ID: B5D-CPE200MW

Mr. Johnson:

Please see the response to your comments below:

1) Please comment on the antenna. Is this antenna considered to be phased-array or steered-beam antenna? If so, please provide further detailed information regarding the antenna, gain, etc. Please note that if the device does contain either of these, we have been requested to consult the FCC before issuing the grant and may require more detailed information.

The antenna is a fixed-beam patch array. It is not electrically steerable.

2) The 731 form shows the FCC ID as B5DCPE200MW, while the labeling shows B5D-CPE200MW. Please confirm the correct FCC ID and correct all affected exhibits.

B5D-CPE200MW is the correct FCC ID. A new 731 form will be submitted if required, the report has been modified.

3) Please provide an RF exposure exhibit for this device.

The document has been submitted for review.

4) Please provide a Users Manual Exhibit. This must include all appropriate FCC statements and RF exposure information.

The document has been submitted for review.

5) Please provide test photographs for the radiated tests as a separate exhibit.

The document has been submitted for review.

6) Section 4.3 of the test report states testing to 15.209 but that the TX was not active. Please note that 15.209 is applied only during TX mode of operation, while 15.109 is applied during RX or idle conditions. Please correct the test report as necessary.

The report has been modified to clarify the measurements.

7) AC conducted emissions must be shown for both Phase and Neutral conductors. Please provide the missing information.

The results as shown represent a worst-case from both the Phase and Neutral conductors; the report has been modified to clarify that.

8) It is uncertain what the plots found on pages 10-12 of the test report are showing compliance to. Please explain.

The report has been modified to remove the ambiguity.

9) Please confirm that this device will only be sold with the PCMCIA Card specified in this application.

Yes, this is correct. This device will only be sold with the PCMCIA card specified in the application. The FCC ID of the card is NI3-2511CD-PLUS3.

10) The device does not appear to have been tested at the lowest and highest available channels (2412 & 2462 MHz) as given on the 731 form and required by 15.31. If these channels are not to be used in the end device, please provide information regarding the lowest and highest TX channels. Additionally, please note that the end user must not be capable of setting channels not approved within this application. Please explain how this is accomplished in the final device (reference 15.15(b)).

The device firmware allows operation only on channels 1 through 11. Measurements were made according to 15.31 requiring measurements near top, near middle and near bottom of the band of operation. Measurements of the lower and upper frequencies have been added to show overall compliance to the operational range of 2400-2483.5 MHz.

11) Please provide information regarding the RBW and VBW settings used for all radiated measurements.

All radiated measurements above 1GHz were made 1MHz RBW and measurements below 1GHz were made with 120kHz RBW as stated in Section 4.0 of the report unless otherwise noted.

12) Several of the limits do not appear to be correctly applied. For instance, measurements made in the 4.5 GHz to 5.15 GHz range should have a limit of 54 dBuV/m for AVG and 74 dBuV/m for Peak since they fall in a restricted band of operation. This range on page 13 & 14 does not appear to be correctly shown and it appears to exceed the limits for several measurements.

The results have been remeasured, recalculated and represented in the report. A high pass filter was used during measurements above 2GHz and a low pass filter used in measurements below 1GHz. A 10dB attenuator was used when measuring the fundamental. The report has been modified to correctly reflect this and all values have been verified.

13) Please provide detailed information (including plots) to show compliance in the restricted bands at the band edges (2310-2390 and 2483.5-2500 MHz) to the 54 and 75 dBuV/m limits.

Plots have been added to the report that show the equipment does not pass into those bands when operating at its extreme frequencies.

14) Even though this device uses a previously approved TX, all applications must be complete and stand on their own. Please note that compliance of the power, 6 dB bandwidth, power spectral density, etc. has not been provided. Please provide this additional test data. Please see that additional attachment which explains appropriate test methods.

Thank you for this information. The changes made to the report should provide adequate detail.

Sincerely,

A handwritten signature in black ink, appearing to read "Doug Kramer". The signature is fluid and cursive, with a large initial "D" and "K".

Doug Kramer
Lab Manager
NCEE