To: Mr. Tim Johnson, American TCB
From: David Waitt
Subject: FCCRVW2330 , IC: 332R-2330 Certification application

Date: 19 September 2005

This letter addresses your technical compliance concerns regarding the IC application for the access point radio referenced above. If there are any questions or if additional information is required, please contact me at david@waitt.us

On behalf of Nortel,

David Waitt

GENERAL

1) The photographs show that the AC power supply already contains one ferrite. However it also shows that the device required a 2nd 2-turn ferrite. How will these 2 ferrites be implemented in production units? Note that the FCC expects the device to ship with all appropriate cables and ferrites installed, unless the device qualifies for professional installation in all installations and the required EMI fixes will be installed upon installation. Please provide further information as necessary.

Nortel: Typically, this power supply would not be used. It is anticipated that the device will be powered via power over Ethernet. In the few instances where the device is powered with one of these power injectors, the ferrite will be installed. The Nortel access point will be professionally installed and the installer will install the ferrite at the time of the installation.

2) The operational description mentions single population versions of the device. Is the manufacturer aware that any depopulation of the radio section will require a new FCC ID even if this is a simple depopulation? If this is a concern and/or the manufacturer is not aware of this, please let me know and I can provide several interpretations along this route for clarification.

Nortel: There will be no de-population of the device, Nortel will ONLY be offering A/B/G access points that are fully populated.

DTS

3) Reports cite internal antennas as +3 dBi (2.4 GHz), but the supporting information suggests up to 4.2 dBi for 2.4 GHz. Please review.

Nortel: The test report has been corrected to indicate a peak, elevation gain of 4.24 dBi. Note that there is 3.5 dBi of loss between the AP power amplifier and the internal antenna.

4) DTS bandedges and methods will need to be adjusted per our discussions. It appears the 802.11b may be acceptable if simply adjusted, but the 802.11g may require further analysis. Also note that it appears that 30 Hz was used and you may be able to use 10 Hz. Additionally, it should take into consideration the highest point seen in the restricted band, not simply the bandedge as it appears some spectral regrowth may possibly be present in the band for the 802.11b. Also the reported delta for low side of 802.11g for average appears to not match the plot.

Nortel: In each case, it was verified that the measured level, while close, was indeed the maximum level within the restricted band. Additionally the BW correction has been removed for the 802.11 B data. IEEE 802.11 G was re-evaluated without using the BW correction factor. The report has been edited to reflect this new data. The measurements were made using a Direct Measurement method outlined in the report.

5) UNII bandedges and methods will need to be adjusted per our discussions. Also note that it appears that 30 Hz was used and you may be able to use 10 Hz. Please review

Nortel:
The UNII band edges have been retested using the “Direct Measurement” procedure outline in the test report. In some cases this results in having to lower the power setting by up to .5 dB. The transmit power, power spectral density and peak excursions measurements have been repeated to reflect this power reduction.

6) AC powerline emissions for this mode do not appear to be provided as required by 15.407(b)(6).

Nortel: the AC power line emissions were provided in the accompanying DTS test report. The power line emissions were measured with the AP transmitting on both the 2,.4 and 5 GHz band simultaneously

7) Please explain compliance to the integral antenna requirement of RSS-210 6.2.2(q1)(i).

Nortel: The 2330 AP is not intended for outdoor operation, additionally, the device is professionally installed by Nortel trained personnel. The antennas for use with the product incorporate a R-SMA connector and are sold by Nortel with the unit to insure that the correct antenna is used with the unit.

8) The users manual should contain the following information as specified by RSS-210 section 5.5. Please correct or comments as appropriate:
User Manual (for transmitter with detachable antenna): The user manual of transmitter devices equipped with a detachable antenna shall contain the following information in a conspicuous location: *"This device has been designed to operate with an antenna having a maximum gain of [x]dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is [y] ohms."* Equipment manufacturer shall provide proper values of x and y to comply with the standard.

Nortel: The following statement will be added to the user manual / installation guide
"This device has been designed to operate with an antenna having a maximum gain of 14dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms."

9) The users manual should contain the following information as specified by RSS-210 section 5.11. Please correct or comments as appropriate:
If the antenna is detachable (selectable by the user), see the user manual requirement in section 5.5. The following instructions in the user manual is also required:
"To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication".
The above statements may be placed on the device instead of in the manual.

Nortel: The following statement will be added to the user manual / installation guide
"To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication".

10) The users manual does not appear to identify the maximum antenna gain for 5250-5350 to comply with EIRP limitations as specified by RSS-210 6.2.2(q1)(iv)(g).

Nortel: A statement will be added to the user manual to indicating the maximum allowable gain is a 14 dBi panel antenna using the low power setting

11 FYI…To meet FCC DoC requirements it does not appear that the name address and telephone number of the responsible party is given in the manual. This should be corrected.

Nortel: The responsible party and associated contact information will be added to the user manual.