



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

May 20, 2003

RE: NETGEAR, Inc.

FCC ID: PY3FWAG114

I have a few comments on the above referenced Application.

- 1) The 5 GHz Mini-PCI card block diagram should show the frequencies of all oscillators in the device (CFR 2.1033(a)(5)). Please provide an updated version that includes this information.
- 2) The antenna appears to contain 2 RF cables, one for 2.4 GHz and one for 5 GHz. Is the internal construction of the antenna actually contain 2 separate antennas, or is there a shared antenna internally. Note that a shared antenna would suggest a concern with mixing of both the 2.4 and 5 GHz signals, therefore created inter-modulation concerns if they operate at the same time and share the same RF antenna. Please provide detailed close up internal photographs that show the various antennas/traces.
- 3) The RF exposure shows separate calculations for each mode of operation (802.11b or 802.11g, 802.11a or 802.11a turbo, etc.). Please explain if this device (under normal use by the user) may transmit simultaneously using both 2.4 GHz band and the UNII band of operation. If so, please update the RF exposure to show the composite RF exposure condition which can occur. Note that page 71 & 71 of the test report appear to mention that both may transmit simultaneously.
- 4) The data shown on page 40, channel 6 does not appear to match the data in the plot. Please explain and/or correct.
- 5) The bandedge deltas given on page 58 appear to be incorrect according to the plots. They should be 49.2 / 49.0 from the data on the plots. Additionally, please adjust the calculation.
- 6) The bandedge deltas given on page 153 appear to be incorrect according to the plots. The fundamental level should be 95.4 dBuV/m according to page 86 instead of 95.0 dBuV/m as listed. Please correct this and the calculation.
- 7) The test report page 10 mentions that the emissions has a 99% duty cycle. For the power spectral density tests, the FCC has stipulated to use one of the following methods:

Method 1:

Use peak detector mode and max hold. Set RBW= 1MHz* and VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band.

Method 2:

Use sample detector and power averaging (not video averaging) mode. Set RBW= 1 MHz*, VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging. This method is permitted only if the transmission pulse or sequence of pulses remains at maximum transmit power throughout each of the 100 sweeps of averaging and that the interval between pulses is not included in any of the sweeps (e.g., 100 sweeps should occur during one transmission, or each sweep gated to occur during a transmission).

* When the emission bandwidth is less than 1 MHz, use a measurement bandwidth equal to the emission bandwidth, in accordance with Section 15.407(a)5.

* It is permissible to use a resolution bandwidth less than the measurement bandwidth provided the measured power is integrated to show total power over the measurement bandwidth. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the measurement band edges or by summing power levels in each band in linear power terms.

It appears that method 2 was applied. However it is uncertain whether video averaging or power averaging was applied. Additionally, please explain how the interval between pulses (1%) was not included in any of the sweeps.

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- 8) Information given on page 146 of the users manual regarding the spread of the signal suggests that the device transmits below the 2.4 GHz band. Please explain.



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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.