

## Helen Zhao

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**Subject:** FW: Re : RE: Netgear, Inc., FCC ID: PY306100032, Assessment NO.: AN06T5648, Notice#1

-----Original Message-----

**From:** lucy.tsai

**Sent:** Wednesday, April 12, 2006 9:41 AM

**Subject:** Re : RE: Netgear, Inc., FCC ID: PY306100032, Assessment NO.: AN06T5648 , Notice#1

Question #1: Please describe how EMC report and test data accounts for all modulations (DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM, 64QAM, MIMO) as indicated in Operational Description. Please explain how you find worst case from the modulation used for all available data rates and data modes and how the four test modes (11b, 11g, 11MIMO, 11 MIMO-CB) were selected.

**Ans:** [Please refer to attached appendix for details.](#)

Question #2: Please explain whether legacy mode (when this device communicate with other non-MIMO devices) has ever been evaluated. If both modes are possible (e.g. transmissions at 2.4GHz with signal or dual signals), both modes have to be tested. Please clarify whether these modes were investigated for all tests: line conducted, conducted spurious, raidated emissions in restricted band, etc.

**Ans:** [For the 11b only, 11g only and 11b/g mode, you will see one RF path is enable and the other one is not enabled. So the test modes we investigated were as report specified: b mode and g mode.](#)

Question #3: Page 7 of the EMC report lists 2462MHz as high channel for MIMO CB mode, which is incorrect. Please update the test report.

**Ans.:** [Please refer to revised test report.](#)

Question #4: The test report does not show that MIMO-CB mode has ever been evaluated during restricted bandedge test. Please submit additional test data.

**Ans.:** [Please refer to revised test report.](#)

Question #5: The test report shows in MIMO and MIMO-CB mode, only one chain was tested, please test both chains, then report test data in chain 0 and chain 1, and based on the following formula

$10\log(10^{(Pd\text{Bmch}0/10)} + 10^{(Pd\text{Bmch}1/10)})$

to calculate the maximum combined peak power output and peak power spectral density.

**Ans:** [Peak power output and peak spectral density were retested.](#)

Question #6: Please include a test setup diagram to show the test configuration during 6dB Bandwidth. If combiner was used, please list in the test report. Please include a test setup diagram to show the test configuration during peak output power measurement as well.

**Ans:** [6dB BW, peak power output and PPSD were tested with chain 0 and chain 1 separately.](#)

Question #7: Please provide any appropriate description of diversity and coding mechanism (e.g. spatial multiplexing or time-space code multiplexing) which may have impacted on the selection of test sequence and procedures. BCM4321 indicates it is using spatial multiplexing, please confirm whether this is a combination of phased array spatial multiplexing MIMO system. If it is, you may need to submit to FCC directly.

**Ans:** [This is not a combination of phased array spatial multiplexing MIMO system.](#)

Question #8: Please indicate whether the signals have fixed phase relationship (i.e. same signal) or if beam-forming is used. Please verify that the current system does not use any beam-forming enhancements. If beam-forming is used, the antenna gain in dBi must include an additional array gain of  $10 \log(N)$ , where N is the number of the antennas. If the phase relationship between the signal is independently varying, an additional array gain is not necessary.

**Ans:** [There is no beam-forming in this module.](#)

Question #9: BCM4321 and BCM2055 datasheets all indicate these two chipsets support 802.11a/b/g and MIMO function, but the operational description and user manual show the device is operating at 2412-2462MHz only. Please confirm and explain how a mode is disable.

**Ans:** [And BCM4321 is the mac/baseband process, BCM2055 is RF transceiver, and current driver will fix the chipset in 2.4G, 5G will not be enabled for this sku.](#)

4/12/2006

Question #10: Page 63 of user manual indicates Mode: 802.11g and 802.11b, 802.11g only... Please explain what is the mode of "802.11g and 802.11b" and what is the mode of "802.11g only". Please explain whether both modes have been investigated during testing.

Ans: For the 11b only , 11g only and 11b/g mode, you will see one RF path is enable and the other one is not enabled.

Question #11: Please update the user manual to include FCC15.21 user information.

Ans: The user manual had been updated in page 3.

Question #12: Please resubmit internal photos to clearly show IC chipset name. Please show clearly where BCM4704, BCM4321 and BCM2055, etc. are. Please also show antenna locations of TX, and RX, indicate chain 0 and chain 1.

Ans: Attached please find the revised internal Photos.

Question #13: Please include schematic diagrams for the wireless cardbus (RF transceivers).

Ans: Attached please find the schematics.

Question #14: Please recalculate MPE based on combined power output.

Ans: The MPE had been recalculated.

Best Regards,  
Helen Zhao

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of the original e-mail date may result in application dismissal and forfeiture of the filing fee. 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 e-mail address listed below the name of the sender.