Helen Zhao

Subject: FW: ??: FW: Alpha Networks Inc., FCC ID: RRK2004090192-1, Assessment NO.: AN04T4388, Notice#1 (Revised)

-----Original Message-----
From: ting@ccsemc.com.tw [mailto:ting@ccsemc.com.tw]On Behalf Of application@ccsemc.com.tw
Sent: Wednesday, December 29, 2004 4:52 PM
To: Helen Zhao
Cc: application@ccsemc.com.tw
Subject: ??: FW: Alpha Networks Inc., FCC ID: RRK2004090192-1, Assessment NO.: AN04T4388, Notice#1 (Revised)

Dear Helen,

Please refer to below for our reply.

Best Regards,
Ting

Question #1: The test report has two sets of antenna port conducted test data associated with two different types of antenna: 5dBi omni-antenna and 18dBi patch antenna. Please confirm with the antenna change, there are any software, firmware or hardware changes are involved. If the answer is YES, please indicate what kind of changes were made in the test

report. If the answer is NO, please explain why antenna port conducted test needs to be repeated with antenna change.
Ans. Yes software or firmware or hardware changes were involved. The reason to perform conducted test with each antenna is because the different antenna type and antenna gain, especially for the

two high gain antennas, the limit of output power or other related conducted tests, if transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi per 15.407 specified. And also different output power may influence other test result, for example, bandedge or spurious emission test.

==> The test report has two sets of antenna port conducted test data associated with two different types of antenna: 5dBi omni-antenna and 18dBi patch antenna. Please note antenna port conducted test is done when antenna

is not connected. So the measurement should be irrelevant to antenna type or antenna gain. If the output power must be adjusted when different antenna is used, repeated test makes sense. But in that case, professional installation is required. Then Modular approval will not applicable when profession installation is required (but Limited Modular Approval might be allowed for some cases). If you confirm the firmware (or software) change is necessary when different antenna is used, please first add installation instruction as how to tune the power when different antanna is used, and properly document power settings associated with the antennas. Secondly please notify the applicant that modular approval is not allowed profession installation is required. If in case, the power was never adjusted, please list only one set of antenna port conducted test data, but remove antenna information on the test report.

Ans. After confirmed with Alpha, they decided to change the full modular approval to limited modular approval and device will be restricted for professional installation. The setting instruction of output power with different antennas has been added in the section of 2.2 of OEM installation guide. Attached please find the revised OEM installation guide and modular request letter.
(See attached file: WMP-A13 Module Approval Letter revised 1229.pdf)

Question #2: Page 21 of the test report listed the wrong power limit. Please note FCC specified the power limit should be the lesser of (11dBm +10logB) or 250mW(24dBm) for 5.25-5.35 GHz band.
Ans. Revised.

Question #3: MPE calculation in the test report is wrong, please redo the calculation.
Ans.#3: Revised as revised test report.
[Helen Zhao] OK

Question #4: The user manual does not contain restriction statement of the use of 5GHz radio, e.g. indoor use only for 5.15-5.25 band. Please revise the user manual accordingly.
Ans. The warning was stated in page 12 of user manual. Besides,

to make more concisely, the warning has also been added in page

3 of user manual.
[Helen Zhao] OK

Question #5: The user manual indicated that the device has been

tested to be colocated with AP (FCC ID: KA22002090027-1) please note only two out of three antennas have been tested with, please rephase the statement to list the antennas that have been tested with.
Ans. Revised as attached revised user manual.
[Helen Zhao] OK

Question #6: The 14dBi patch antenna was used for 5.15-5.35 GHz band testing, while 18dBi patch antenna was used for 5.725-5.850 GHz band testing, please explain when 14dBi patch antenna is installed, how the device works at 5.725-5.850 GHz band, and 18dBi patch antenna is installed, how the device works 5.15-5.35 GHz bands.
Ans. When using 14dBi patch antenna, the device can only work in 5250-5350MHz, and 5725-5850MHz for 18dBi antenna only. So before placing on the market, the operating frequency may be set by software according to the antenna supplied. Such information has been added in the page 12 of user manual.
[Helen Zhao] OK

New question: Question #7 : Page 3-9 of the Installation manual

provided detailed instrunction on how to do software control including frequency range setting. Please note this kind of information can be provided to OEM integrator only, can not be provided to the end users. Please add some kind of statement into the installation manual.
Ans. The installation manual is revised as "OEM Installation Guide" as attached file.
New question: Question #8 : Section 2.7 Regulatory Requirement (Page 17) of Installation Manual mentioned SAR: FCC Part 15.407(f), please note this device is seeking modular approval,

SAR is not applicable here. Please remove it from the installation manual.
Ans. Revised as attached file.

New question: Question #9: Setup photos of colocation test show

when two high gain panel antennas were used, two panel antennas

were actually not placed at the same plane: one was perpendicular to the other one, which prevented the receiver antenna from receiving the maximum signals from two antennas.

The test results thus does not acurately reflect the real situation. Please explain.
Ans. According to the test procedure, the turntable shall be rotated for 360 degrees to determine the position of maximum emission level, so though the EUT antennas are set prependicular to one another, the max signal still can be measured by the receiving antenna.

==> Your receiving antenna might be able to get the maximum emission level from one panel antenna when it was facing toward the receiveing antenna, but it definately could not get the maximum emission level from the other panel antenna since the other panel antenna was perpendicular to the receiving antenna at that time, vice verse. So your receiving antenna never caught the maximum emission level from both antennas due to this placement, which makes your measurement inaccurate. Please reconsider this situation.

New question: Question #10: The restrice bandedge test results show the device passed the test with little margin, please specify whether there is any minimum cable loss requirement. Please also provide the cable loss of the cable used during the test.
Ans. Yes, the antenna factor and cable loss have been offset as following:
for 5150MHz, total offset is 35.84dBm= 34.096(antnena facotr) +1.764(cable loss);
for 5350MHz, total offset is 36.2dBm= 34.376(antnena facotr) +1.84(cable loss);
(See attached file: WMP-A13 UserMan revised1217.pdf)(See attached file: 40913009-RP1 Part 15.407 UNII without 18dBi Revised 1217.pdf)

==>In this case, please document the minimum cable length or cable loss clearly in the installation manual.
Ans. Has been added on the OEM installation guide.
(See attached file: WMP-A13 UserMan revised1227.pdf)

New question: Question #11: Setup photos of colocation test show when two omni antennas were used, they are not in the same direction (here I am not talking about z plane), actually two antennas are in two different planes that one is perpendicular to the other. Is this specially designed? What for?

Ans. There is no special design for the antennas. We double check with Engineering department and know that the two antennas are omni type and have same characteristics at different direction (parallel or

perpendicular). Besides, two antennas' position will become perpendicular to one another is because the design of screw. After screwed on, they then become perpendicular..(See attached file: WMP-A13 Test Sup Photo (Part 15.407 UNII) Revised 1217.pdf)

New question: Question #12: The RBW setting for 26dB bandwidth testing is incorrect. RBW should be set at least 1% of the emission bandedge, the bandedge is around 24-49 MHz, 100KHz is not enough. Please redo the bandedge test with the correct RBW setting.

Ans. 26dB bandwidth testing has been redid and please refer to attached revised test report for details.
(See attached file: WMP-A13 Test Rpt (Part 15.407 UNII) Revised 1224.pdf)

New question: Question #13: Based upon FCC15.407(a)(2) the power spectral density limit must reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi, please revise the report to change the limit when 14dBi antenna is used.

Ans. Revised as attached revised test report.

New question: Question #14: 5dBi antenna can be used in 5150-5350 MHz band, please note 5150-5250 MHz band is stricted for indoor use only. Please explain how an outdoor AP(FCC ID: KA22002090027-1) to be continue work ourdoor when this 802.11a module card with 5dBi antenna is colocated.

Ans. When co-located with AP, 5150-5250MHz will be disable by software by placing on the market.

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.


WMP-A13 Module Approval Letter…


WMP-A13 Test Sup Photo (Part 1…


WMP-A13 Test Rpt (Part 15.407 …


WMP-A13 UserMan revised1227.pd…