Chris Harvey

From: Claire Hoque [claire.hoque@ccsemc.com]
Sent: Tuesday, February 10, 2009 10:32 AM
To: Chris Harvey; Chris Harvey -TCB
Cc: Neena Jain
Subject: pls use this revised UNII report: Apple Inc., FCC ID: BCGA1302, Assessment NO.: AN09T8839, AN09T8840 & AN09I2770 Notice#1

Attachments: 08U12087-2A FCC UNII IC RSS-210.pdf

08U12087-2A FCC UNII IC RSS-21...

Hi Chris,

Our engineering dept. just updated UNII report again, so pls use the attached report instead.

Thanks,

Claire Hoque
Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538, USA
Tel: (510) 771-1123
Fax: (510) 661-0888

-----Original Message-----
From: Claire Hoque
Sent: Tuesday, February 10, 2009 10:19 AM
To: Chris Harvey; Chris Harvey -TCB
Cc: Neena Jain
Subject: answer: Apple Inc., FCC ID: BCGA1302, Assessment NO.: AN09T8839, AN09T8840 & AN09I2770 Notice#1

Hi Chris,

Pls see answer below.

1. The internal photos do not show the internal construction with the enclosure, or the antennas and connections to the 4 antenna connectors. Please provide these additional internal photos.
------ Client: As indicated in section 5 of the Theory of Operation and internal photos, two of the antennas are connected to the 2.4 GHz radio and two of the antennas are connected to the 5 GHz radio. Even though there are a total of four transmitting antennas, but because the 2.4 GHz and 5 GHz radios operate independently, this device is a 2x2 MIMO transceiver.

2. This device has a USB port, but it is unclear if this can be connected to a computer (as shown in the test report or just a Printer, HD or hub as shown in the manual). If this connects directly to a computer by cable then this device is classified as a Computer Peripheral according to FCC Part 15, otherwise it is just a Class B Digital Device subject to Verification). The labeling does not include the FCC logo of DoC approval (even though the setup guide uses the term FCC Declaration of Conformity). There has not been an application for

Certification of the Computer Peripheral (class JBP) submitted with the transmitter applications. Please clarify if this device is a computer peripheral and if so please provide evidence of FCC DoC or Certification for the Computer Peripheral portion of this device.
----- Client: The USB port does not connect to a computer. It is used for printers.

3. The DTS RF test report section 5.2 maximum power table incorrectly indicates the upper frequency in the 5745-5825MHz band as 5805MHz. The test data in the report seems to show the frequency as 5825MHz.
-------- CCS: the report has been corrected.

4. The Theory of operation indicates that the 2.4GHz and the 5GHz transmitters can operate simultaneously. It appears as though all 4 transmit chains can operate simultaneously. Please address the worst case RF Exposure MPE calculation for all individual transmitters and for worst case simultaneous transmissions. Please note that the DTS report MPE calculation states a 6.94 dBi antenna gain, which does not seem to be supported in the rest of the report, but may be the effective gain for the NII 5.2GHz band. Please also ensure that the RSS-102 declaration also addresses the worst case MPE calculation.
--------- CCS: The report has been corrected.

5. The Theory of operation states that this device uses 2x2 MIMO operation but gives no further details of the MIMO operation. Please provide more detailed description of the MIMO operation (Spatial Multiplexing, Cyclic Diversity, phased array, smart antenna, etc.).
----- Client: Please refer to section 5 of the Theory of Operation. This device is a 2x2 Spatial Multiplexing MIMO System for each of 2.4 GHz and 5 GHz radios. Both radios support Cyclic Delay Diversity (CDD) mode, for 2.4 GHz radio, it can only support H20. For the 5 GHz radio, it supports H20 and H40 modes. This device is not utilizing phased array antennas and it is not classified as a smart antenna system per the definition of 15.247 (c)2i-iv.

Thanks,

Claire Hoque
Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538, USA
Tel: (510) 771-1123
Fax: (510) 661-0888

-----Original Message-----
From: Thu Chan
Sent: Tuesday, February 03, 2009 5:00 PM
To: Claire Hoque
Subject: FW: Apple Inc., FCC ID: BCGA1302, Assessment NO.: AN09T8839, AN09T8840 & AN09I2770 Notice#1

fyi

-----Original Message-----
From: Chris Harvey
Sent: Tuesday, February 03, 2009 3:36 PM
To: Thu Chan
Cc: Chris Harvey
Subject: Apple Inc., FCC ID: BCGA1302, Assessment NO.: AN09T8839, AN09T8840 & AN09I2770 Notice#1

Dear Thu Chan and Claire Hoque,

You are listed as the Technical Contact for the above referenced TCB application. The following item(s) need(s) to be resolved before the review can be continued:

1. The internal photos do not show the internal construction with the enclosure, or the antennas and connections to the 4 antenna connectors. Please provide these additional internal photos.

2. This device has a USB port, but it is unclear if this can be connected to a computer (as shown in the test report or just a Printer, HD or hub as shown in the manual). If this connects directly to a computer by cable then this device is classified as a Computer Peripheral according to FCC Part 15, otherwise it is just a Class B Digital Device subject to Verification). The labeling does not include the FCC logo of DoC approval (even though the setup guide uses the term FCC Declaration of Conformity). There has not been an application for Certification of the Computer Peripheral (class JBP) submitted with the transmitter applications. Please clarify if this device is a computer peripheral and if so please provide evidence of FCC DoC or Certification for the Computer Peripheral portion of this device.

3. The DTS RF test report section 5.2 maximum power table incorrectly indicates the upper frequency in the 5745-5825MHz band as 5805MHz. The test data in the report seems to show the frequency as 5825MHz.

4. The Theory of operation indicates that the 2.4GHz and the 5GHz transmitters can operate simultaneously. It appears as though all 4 transmit chains can operate simultaneously. Please address the worst case RF Exposure MPE calculation for all individual transmitters and for worst case simultaneous transmissions. Please note that the DTS report MPE calculation states a 6.94 dBi antenna gain, which does not seem to be supported in the rest of the report, but may be the effective gain for the NII 5.2GHz band. Please also ensure that the RSS-102 declaration also addresses the worst case MPE calculation.

5. The Theory of operation states that this device uses 2x2 MIMO operation but gives no further details of the MIMO operation. Please provide more detailed description of the MIMO operation (Spatial Multiplexing, Cyclic Diversity, phased array, smart antenna, etc.).

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.

Best regards,

Chris Harvey
Charvey-tcb@ccsemc.com