Mike Kuo

From: Tom Cokenias [tom@tncokenias.org]
Sent: Friday, July 15, 2005 10:48 AM
To: Mike Kuo
Cc: Yan Zheng
Subject: Re: FW: Airgo Networks, FCC ID: SA3-AGN1022PC0100, Assessment NO.: AN05T4928, Notice#3
Attachments: Authorization_Letter.pdf; Revised_cardbus_manual.pdf; mfrdemoscreen.doc; bgcb_rate_power.xls

Hi Mike

Answers follow questions.

-----Original Message-----
From: Compliance Certification Services [mailto:mike.kuo@ccsemc.com]
Sent: Tuesday, July 12, 2005 1:21 AM
To: Mike Kuo
Subject: Airgo Networks, FCC ID: SA3-AGN1022PC0100, Assessment NO.: AN05T4928, Notice#3

Question #1: Please clearly documented the test setup in the test report for each of test item. The test setup should include the following :

1. How the chain 1 and chain 2 tests were performed ?

ANS 1 All conducted tests were performed one chain at at time, with the other chain terminated in 50 ohms.

2. Is the power setting on each chain identical ? Please provide a screen shot for the test software setting.

ANS 2 The chain powers are slightly different and will be unique for each individual board. The sum of the two chains is equal to the power setting of the software interface GUI, within tolerance. The software used to test this product is MfrDemo. Screen shot of GUI is supplied in separate attachment

3. Is combiner used during the tests ?

ANS3 No combiner was used for any test

4. What is the test setup for total power, total power density etc. ? is it a calculated result, if yes, please document the formula used.

ANS4 Test set-up is per ANS1 above. Power and power density in each chain were recorded in dBm. The dBm logarithm values were converted to equivalent linear units in mW. Total power and power density are calculated. The two single chain values were summed and this sum was then converted to dBm for the report:

Ptotal, dBm = 10log(antilog (TX1 dBm/10) + antilog (TX2 dBm/10))

Question #2: What is dual mode mean ? Is there a single mode as well ?

ANS 2 "Dual mode" means both chains operating at the same time. This is the only normal operating mode for this product. Single chain operation is possible only with the proprietary test software and is performed only for product test

Question #3: In the test report, "6 Mbps was used as the worst case due to the test experiences." Please provide a table of rated output power of each of data rate for b mode and g mode to support above statement .

ANS 3 Attached please find a table showing maximum allowed power v data rate for this product. For highest power, preliminary tests were performed using average power meter and peak power meter to determine power variation with data rate. It was determined that peak power did not vary with data rate. Data rates were chosen for settings that showed highest measured average power

Question #4: What was the transmitting conditions during the radiated restricted band and spurious emission tests. Please clearly document the mode of operation during the tests.

ANS 4 The EUT was placed inside the cardbus slot of a laptop pc. Both TX chains were activated for continuous transmission at power levels reported as maximum for each channel

Question #5: In the tabular data for spurious emission, there is no value for power setting , please indicate clearly what was the setting used.

ANS 5 The following average power settings were used. They were the same GUI settings used to determine peak power and SAR power settings:

Frequency MHz	Mode	Gain Setting	Average Power (measured)
2412	b	47	21.15
	g	47	18.4
2437	b	57	23.0
	g	53	19.75
2462	b	44	18.3
	g	43	15.7

Question #6: As indicated in the theory of operation, this device is capable of transmitting with 14 channels. In the user manual, it also provided a option for end user to select regulatory domain . Based upon FCC requirements, this device can only be transmitting within the

authorized frequency range, the manufacturer can not allow the end user to have selections to choose the frequency range which are not

authorized. Please address this non-compliance issue.

ANS 6 Product firmware and EEPROM are set at the factory for the regulatory domain of the country to which product will be shipped and the user is limited to these operating frequencies only. Revised user manual clarifies this, see separate attachment

Question #7: User manual does not include regulatory statement as required in Part 15 and there is no RF exposure warning statement. Please provide revised user manual to address these requirements.

ANS 7 Revised user manual includes these statements

Question #8 : Please submit agency authorization letter.

ANS 8 Authorization letter attached

Question #9: Please identify Chain 0, Chain 1 and Chain 2 in the internal photos and description of each chain in term of TX only, TRX or RX only.

ANS 9 For the 2x2 products there are only two chains, referred to as chain 0 and chain 1 in documentation and TX1 and TX2 in the MfrDemo test software GUI. Each chain is both TX and RX. There is no third channel for this product.

SAR portion :

Question #10 : By comparing host #1 with Host #2 and #3, the SAR distribution are very different in term of number of hot spots. As demonstrated in host #1 SAR plots, there are two hot spots but in the Host #2 and #3, only one hot spot is detected. Please explain the mode of operation used for each host. What was the transmitting conditions? how many chain was activated ?

ANS 10 >> There are two hot spots in host # 1 because of distance from EUT to phantom is lower than host # 2 and host # 3.

Distances between EUT and phantom:

11 mm for host # 1

13 mm for host # 2

12.5 mm for host # 3

Both TX1 and TX2 were enabled during SAR measurements.

Best Regards

Mike Kuo

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.