MPE Test Report

of

Product Name

802.11 BG Wireless Module

Model

VNT6656GEV00
(Brand:VIA)

Applied by:

VIA Technologies, Inc.
8F,533,Chung-Cheng Road
Hsin-Tien,Taipei 231
Taiwan, R. O. C.

Test Performed by:

International Standards Laboratory

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Contents of Report

1. General

1.1 Certification of Accuracy of Test Data

Standards:	CFR 47 Part 15 Subpart B Class B CFR 47 Part 15 Subpart C (Section 15.247)
Test Procedure:	ANSI C63.4:2003
Equipment Tested:	802.11 BG Wireless Module
Model:	VNT6656GEV00
Applied by:	VIA Technologies, Inc.
Sample received Date:	2006/12/22
Final test Date :	2006/12/25-2006/12/28
Test Result	PASS
Test Site:	Chamber 02, Conduction 02
Temperature	Refer to each site test data
Humidity:	Refer to each site test data
Test Engineer:	Jerry Chiou

All the tests in this report have been performed and recorded in accordance with the standards described above and performed by an independent electromagnetic compatibility consultant, International Standards Laboratory.

The test results contained in this report accurately represent the measurements of the characteristics and the energy generated by sample equipment under test at the time of the test. The sample equipment tested as described in this report is in compliance with the limits of above standards.

Approve & Signature

Eddy Hsiung/Director

Test results given in this report apply only to the specific sample(s) tested under stated test conditions. This report shall not be reproduced other than in full without the explicit written consent of ISL. This report totally contains 9 pages, including 1 cover page, 1 contents page, and 7 pages for the test description. This report must not be use to claim product endorsement by NVLAP or any agency of the U.S. Government.

This test data shown below is traceable to NIST or national or international standard. International Standards Laboratory certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).

2. Description of Equipment Under Test (EUT)

Description:	802.11 BG Wireless Module
Model No.:	VNT6656GEV00
Brand:	VIA
Frequency Range 802.11b/g:	2400~2483.5 MHz
Support channel:	
802.11b/g	11 Channels
Modulation Skill:	
802.11b	DBPSK(1Mbps), DQPSK(2Mbps), CCK(5.5/11Mbps)
802.11g	OFDM (6M - 54Mbps)
Antennas Type:	
Antenna 1: PIFA	(6-23-7M59K-021 , made by FAVORTRON CO., LTD)
Antenna 2: PIFA	(6-23-7M59K-011 , made by FAVORTRON CO., LTD)
Antenna 3: PIFA	(13-130-F14911, made by VSO ELECTRIC CO., LTD)
Antenna 4: PIFA	(13-130-F14931 , made by VSO ELECTRIC CO., LTD)
Antenna 5: PIFA	(13-130-F53021 , made by VSO ELECTRIC CO., LTD)
Antenna 6: PIFA	(13-130-F62011 , made by VSO ELECTRIC CO., LTD)
Antenna 7: PIFA	(13-130-F62021 , made by VSO ELECTRIC CO., LTD)
Antenna 8: PIFA	(14-211-F66021 , made by VSO ELECTRIC CO., LTD)
Antenna 9: PIFA	(14-211-F66041 , made by VSO ELECTRIC CO., LTD)
Antenna 10: PIFA	(K05008004451 , made by FAVORTRON CO., LTD)
Antenna 11: PIFA	(K05008004351 , made by FAVORTRON CO., LTD)
Antenna 12: PIFA	(K05008003651 , made by FAVORTRON CO., LTD)
Antenna 13: PIFA	(K05008003751 , made by FAVORTRON CO., LTD)
Antenna 14: PIFA	(K05004002251 , made by FAVORTRON CO., LTD)
Antenna 15: PIFA	(K05004002351 , made by FAVORTRON CO., LTD)
Antenna 16: PIFA	(WDAN-U1L41001-DF , made by Hon Hai Precision Industry Co.,Ltd.)
Antenna 17: PIFA	(WDAN -U1L51002 -DF , made by Hon Hai Precision Industry Co.,Ltd.)
Antenna Connected:	The antenna is connected to the RF connector of the WLAN adapter.
Antenna peak Gain:	
Antenna 1:	-0.01 dBi (2.4GHz, Main/Aux)
Antenna 2:	-0.97 dBi (2.4GHz, Main/Aux)
Antenna 3:	-4.4 dBi (2.4GHz, Main/Aux)
Antenna 4:	-4.4 dBi (2.4GHz, Main/Aux)
Antenna 5:	-3.37 dBi (2.4GHz, Main) Grey -6.03 dBi (2.4GHz, Aux) Black
Antenna 6:	-0.22 dBi (2.4GHz, Main/Aux)
Antenna 7:	-0.22 dBi (2.4GHz, Main/Aux)
Antenna 8:	-0.31 dBi (2.4GHz, Main/Aux)
Antenna 9:	-1.55 dBi (2.4GHz, Main/Aux)

Antenna 10:	0.79 dBi (2.4GHz, Main/Aux)
Antenna 11:	-0.08 dBi (2.4GHz, Main/Aux)
Antenna 12:	0.74 dBi (2.4GHz, Main/Aux)
Antenna 13:	0.18 dBi (2.4GHz, Main/Aux)
Antenna 14:	2.80 dBi (2.4GHz, Right) 1.68 dBi (2.4GHz, Left)
Antenna 15:	0.93 dBi (2.4GHz, Right) 1.26 dBi (2.4GHz, Left)
Antenna 16:	-1.38 dBi (2.4GHz, Main) 0 dBi (2.4GHz, Aux)
Antenna 17:	-1.99 dBi (2.4GHz, Left) -1.4 dBi (2.4GHz, Right)
WLAN Power Type :	3.3V DC from the EUT

The channel and the operation frequency of 802.11b and 802.11g is listed below:

Channel	Frequency(MHz)	Channel	Frequency (MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437		

During the test, the EUT was tested as a modular device of a notebook PC using a USB extender board to extend the EUT outside the notebook PC enclosure. There are 17 PIFA antennas in the EUT:

The antenna 1~9 has already been tested in the original application. Please refer to ISL report-06LR016FC. Due to the typo errors, we need to modify the model numbers for antenna 8 and 9 on this test report (The antenna reports were correct). The antenna 10~17 are newly-increased.

All of antennas have been tested. The worse data of each antenna type are shown. Configuration list as below:

VNT6656GEV00	PIFA Antenna
802.11b/g	Antenna 14

2.1 General Test Conditions

1. During the test, the EUT was set in continuously transmitting mode with a duty cycle of 99% for 802.11b.

2. The EUT was set in continuously transmitting mode with a duty cycle of 99% for 802.11g.

3. The channel 1, 6, 11 of 802.11b/g of EUT were all tested.

3. RF Exposure Measurement [Section 15.247(b)(4) & 1.1307(b)]

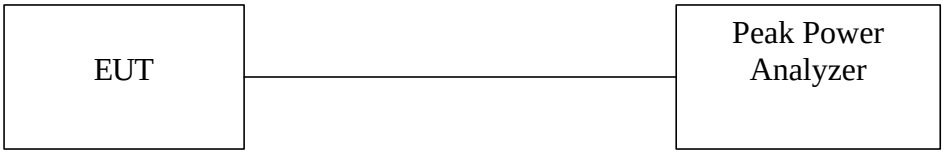
3.1 Applied Standards

FCC PART 1.1307, 1.1310, 2.1091, 2.1093 RF EXPOSURE

3.2 Test Procedure

The Transmitter output of EUT was connected to the Peak Power Analyzer

3.3 Test Setup



3.4 Calculation for Maximum Permissible Exposure (MPE)

From FCC 1.1310 Table 1B, the maximum permissible RF exposure for an uncontrolled environment is 1 mW/cm2 .The actual power density for the EUT with the antenna is calculated as shown below.

$$S = (P \times G)/(4 \times \pi \times d^2)$$

where:
S = power density
P = transmitter conducted power in (W)
G = antenna numeric gain
d = distance to radiation center (m)

802.11b

Antenna Manufacturer	Antenna Type	Gain (dBi)	Numeric Gain	Frequency (MHz)	Power (dBm)	Power (mW)	Separation Distance (cm)	Power Density (W/m2)	Power Density (mW/cm2)
FAVORTRON CO., LTD P/N: K05004002251	PIFA in Metal	2.80	1.91	2412	19.131	81.87	20	0.3103	0.03103
				2437	19.224	83.64	20	0.3171	0.03171
				2462	18.912	77.84	20	0.2951	0.02951

802.11g

Antenna Manufacturer	Antenna Type	Gain (dBi)	Numeric Gain	Frequency (MHz)	Power (dBm)	Power (mW)	Separation Distance (cm)	Power Density (W/m2)	Power Density (mW/cm2)
FAVORTRON CO., LTD P/N: K05004002251	PIFA in Metal	2.80	1.91	2412	22.475	176.81	20	0.6702	0.06702
				2437	22.037	159.85	20	0.6059	0.06059
				2462	21.881	154.21	20	0.5846	0.05846

WARNING:
It is the responsibility of the installer to ensure that the EUT is a WLAN module and a specified antenna inside. Only the specified antennas listed above may be used. The use of any other antenna is expressly forbidden in accordance with FCC rules CFR 47 part 15.204.

NOTICE:
FCC Radiation Exposure Statement
This equipment complies with FCC radiation exposure limits for an uncontrolled environment when installed as directed. This equipment should be installed and operated with the specified antenna listed in this report.

4. Appendix : Test Equipment

4.1 Test Equipment List

Location	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Rad. Above 1Ghz	Peak Power Analyzer	HP	8990A	3621A01269	01/02/2007	01/02/2008

Note: Calibration traceable to NIST or national or international standards.