

MPE Test Report

Of

Product Name

Wireless 802.11g MiniPCI Card

Model

WM1260

(Brand: CastleNet)

Applied by:

CastleNet Technology Inc.
16F, No. 957, Chung-Cheng Rd.,
Chung-Ho City ,Taip
Taiwan R. O. C.

Test Performed by:

International Standards Laboratory

No. 120, Lane 180, San Ho Tsuen, Hsin Ho Rd.
Lung-Tan Hsiang, Tao Yuan County 325
Taiwan, R.O.C.
Tel:(03)407-1718 Fax:(03)407-1738

Report Number: ISL-04LR034MPE

Issue Date: 2004/12/08

HC LAB:NVLAP:200234-0;VCCI: R-341,C-354;NEMKO:ELA 113a,113c;BSMI:SL2-IN-E-0037;SL2-R1-E-0037;CNLA:1178
LT LAB:NVLAP:200234-0;VCCI: R-1435,C-1440;NEMKO:ELA 113b,113d;BSMI:SL2-IN-E-0013;CNLA:0997

Contents of Report

1.	General.....	1
1.1	Certification of Accuracy of Test Data.....	1
2.	Description of Equipment Under Test (EUT)	2
2.1	General Test Conditions.....	3
3.	RF Exposure Measurement [Section 15.247(b)(4) & 1.1307(b)]	4
3.1	Applied Standards.....	4
3.2	Test Procedure.....	4
3.3	Test Setup	4
3.4	Calculation for Maximum Permissible Exposure (MPE)	4
4.	Appendix : Test Equipment.....	6
4.1	Test Equipment List.....	6

1. General

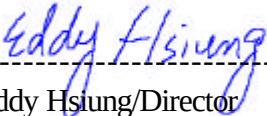
1.1 Certification of Accuracy of Test Data

Standards:	CFR 47 Part 15 Subpart B Class B CFR 47 Part 15 Subpart C (Section 15.247)
Test Procedure:	ANSI C63.4: 2001
Equipment Tested:	Wireless 802.11g MiniPCI Card
Model:	WM1260
Applied by:	CastleNet Technology Inc.
Sample received Date:	2004/11/18
Final test Date :	2004/11/30
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 8 pages, including 1 cover page , 1 contents page, and 6 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:	Wireless 802.11g MiniPCI Card		
Model No.:	WM1260		
FCC ID:	RK9-WM1260		
Brand:	CastleNet		
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: Dipole	made by ADVANCED-CONNECTEK INC.		
Antenna 2: Dipole	made by WIESON TECHNOLOGIES CO.,LTD.		
Antenna Connected:	The antenna is connected to the RF connector of the WLAN adapter.		
Antenna peak Gain:			
Antenna 1:	Main (p/n:ADA3I-3K52203)	1 dBi	
	Aux (p/n:ADA3I-3K52202)	1 dBi	
Antenna 2:	Main (p/n:Y111Q139-002)	2.24 dBi	
	Aux (p/n: Y111Q139-001)	2.24 dBi	
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 PCMCIA extender board to extend the EUT outside the notebook PC enclosure.

There are two antennas in the EUT:

Antenna 1,2 are Dipole type in Hirose connector.

All antennas have been tested, only the worst data of WM1260 using Antenna 2 was shown in this test report.

2.1 General Test Conditions

1. During the test, the EUT was set in continuously transmitting mode with a duty cycle of 95%.for 802.11b.
2. The EUT was set in continuously transmitting mode with a duty cycle of 85%.for 802.11g.
3. The channel 1, 6, 11 of of 802.11b/g of EUT were all tested.

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

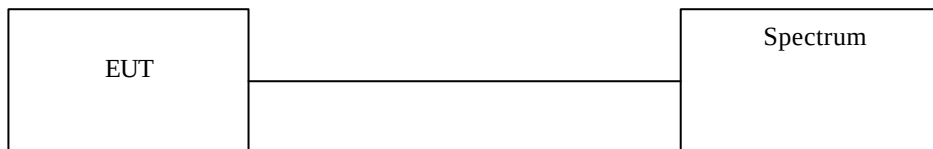
3.1 Applied Standards

FCC PART 1.1307, 1.1310, 2.1091, 2.1093 RF EXPOSURE

3.2 Test Procedure

1. 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/m ²)	Power Density (mW/cm ²)
WIESON TECHNOLOGIES CO.,LTD. p/n:Y111Q139-001	Dipole	2.24	1.67	2412	15.843	38.40	20	0.1279	0.01279
				2437	15.093	32.31	20	0.1279	0.01279
				2462	14.406	27.58	20	0.1279	0.01279

802.11g:

Antenna Manufacturer	Antenna Type	Gain (dBi)	Numeric Gain	Frequency (MHz)	Power (dBm)	Power (mW)	Separation Distance (cm)	Power Density (W/m ²)	Power Density (mW/cm ²)
WIESON TECHNOLOGIES CO.,LTD. p/n:Y111Q139-001	Dipole	2.24	1.67	2412	18.468	70.27	20	0.2342	0.02342
				2437	17.906	61.74	20	0.2342	0.02342
				2462	17.281	53.47	20	0.2342	0.02342

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 antennas (vendor: WanShih Electronic CO., model: Wss002) in a fixed-mount configuration, installed with a maximum of 19.037 dBm of radiated output power during normal operation

4. Appendix : Test Equipment

4.1 Test Equipment List

Equipment Name: Spectrum Analyzer 08

Brand: Advantest

Model: R3132

S/N: 111000867

Last Cal. Date: 11/02/2004

Next Cal. Date: 11/02/2005

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