



# MPE Test Report

of

*Product Name*

**WLAN 802.11B/G CF MODULE**

*Model*

**DRCM-81**

*Applied by:*

Wistron Neweb Corporation  
No. 10-1, Li-hsin Road 1,,  
Science-based Industrial0  
Taiwan, R. O. C..

*Test Performed by:*

**International Standards Laboratory**

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**Report Number: ISL-06LR017MPE**

**Issue Date:2006/06/30**

**HC LAB:**NVLAP:200234-0;VCCI: R-341,C-354; NEMKO:ELA 113A;BSMI:SL2-IN-E-0037;SL2-R1-E-0037;CNLA:1178; IC:IC4067

**LT LAB:** NVLAP:200234-0;VCCI: R-1435,C-1440;NEMKO:ELA 113B; BSMI:SL2-IN-E-0013;CNLA:0997; IC:IC4164-1

ISL-T10-R2-3

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# 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:** WLAN 802.11B/G CF MODULE

**Model:** DRCM-81

**Applied by:** Wistron Neweb Corporation

**Sample received Date:** 2006/06/28

**Final test Date :** 2006/06/27-2006/06/29

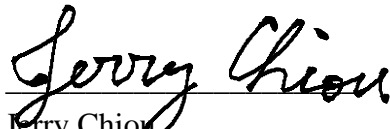
**Test Result** PASS

**Test Site:** Chamber 02, Conduction 02

**Temperature** Refer to each site test data

**Humidity:** Refer to each site test data

**Test Engineer:**

  
Jerry Chion

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

  
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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 used 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:	WLAN 802.11B/G CF MODULE
Model No.:	DRCM-81
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	(F1B-204406-52, made by Long-Chu Co.)
Antenna 2: Dipole	(C478-510028-A, made by Wha Yu Co.)
Antenna Connected:	The antenna is connected to the RF connector of the WLAN adapter.
Antenna peak Gain:	
Antenna 1:	1.82 dBi (11b/g)
Antenna 2:	2.5 dBi (11b/g)
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 Dipole antennas in the EUT:

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

DRCM-81	PIFA Antenna
802.11b/g	Antenna 2

## 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 93% 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)]

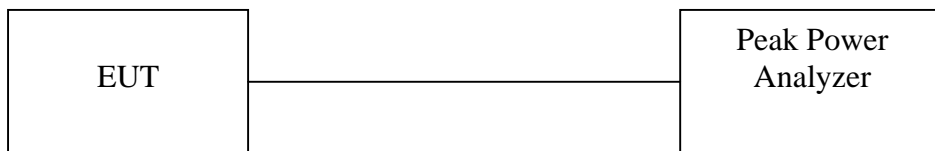
#### 3.1 Applied Standards

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/cm<sup>2</sup>. 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 <sup>2</sup> )	Power Density (mW/cm <sup>2</sup> )
Wha Yu Co. P/N: C478-510028-A	Dipole	2.50	1.78	2412	15.3	33.88	20	0.1199	0.01199
				2437	16	39.81	20	0.1408	0.01408
				2462	16.31	42.76	20	0.1513	0.01513

**802.11g**

Antenna Manufacturer	Antenna Type	Gain (dBi)	Numeric Gain	Frequency (MHz)	Power (dBm)	Power (mW)	Separation Distance (cm)	Power Density (W/m <sup>2</sup> )	Power Density (mW/cm <sup>2</sup> )
Wha Yu Co. P/N: C478-510028-A	Dipole	2.50	1.78	2412	17.78	59.98	20	0.2122	0.02122
				2437	17.96	62.52	20	0.2212	0.02212
				2462	17.74	59.43	20	0.2102	0.02102

**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	01/02/2006	01/02/2007

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