

MPE Test Report

of

802.11g Wireless Cable Residential Gateway
(with Wireless 802.11g Minipci Card, Model: WM1260 inside)

Model

CBW500,CBW501

(Brand:CastleNet)

Applied by:

CastleNet Technology Inc.
16F, No. 957, Chung-Cheng Rd.,
Chung-Ho City ,Taipei 235
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: 04LR014MPE

Test Date: 2004/03/02

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	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

The test results contained in this report accurately represent the measurements of the Electrical Field characteristics and the energy generated by sample equipment under test at the time of the test.

Equipment Tested 802.11g Wireless Cable Residential Gateway
Model: CBW500, CBW501
Applied by: CastleNet Technology Inc.

Sample received Date: 2004/02/20

Final test Date : 2004/03/02

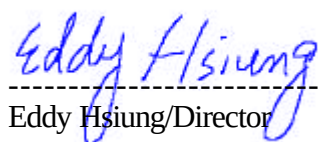
Test Site: Chamber 02, Conduction 02

Temperature 221° C(Conduction Test); 23° C (Radiation Test)
Humidity: 51% (Conduction Test); 52% (Radiation Test)

Test Engineer: Jerry Chiou

The results show that the sample equipment tested as described in this report is in compliance with the FCC Section 15.247(b)(5) & 1.1307(b)(1) MPE.

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 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

Description:	802.11g Wireless Cable Residential Gateway
Model No.:	CBW500, CBW501
FCC ID:	RK9-CBW500
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:	Dipole made by ADVANCED-CONNECTEK INC.
Antenna Connected:	The antenna is connected to the RF connector of the WLAN adapter, and the user is not possible to change the antenna without disassembling the EUT
Antenna peak Gain:	
Main (p/n:ADA3I-3K52203)	1 dBi
Aux (p/n:ADA3I-3K52202)	1 dBi
WLAN Power Type :	3.3V DC from the EUT
Power Adaptor:	DVE (Model:DSA-0131F-12 EU 12)2-pin DVE(Model:DSA-0131F-12 US 12)2-pin OEM (Model: AD-121ANB)
Power Cord:	Non-shielded, Detachable
RJ-45 Port:	four 8 pin (10 Mbps / 100 Mbps)
USB Port:	one 4-pins
Cable In Jack:	one
Power In Jack:	one

The Wireless cable residential gateway is a broadband gateway product combining Ethernet network and wireless lan.

This WLAN device is a 802.11b+g wireless lan adapter, and its operation frequency is from 2400MHz to 2483.5MHz. There are 11 channels for data communication.

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		

The main difference between CBW500 and CBW501 is that the CBW500 has four RJ-45 Ports and the CBW501 has one RJ-45 Port only. All types of LAN Speed, USB Mode and Power Adapter have been tested, we present the worst case test data in the report.

2.1 General Test Conditions

1. During the test, the EUT was set in continuously transmitting mode with a duty cycle of 100%.
2. 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 through an attenuator.

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)

	Antenna Manufacturer	Antenna Type	Gain (dBi)	Numeric Gain	Power (dBm)	Power (mW)	Separation Distance (cm)	Power Density (W/m ²)	Power Density (mW/cm ²)
11b	ADVANCED-CONNECTEK INC (p/n:ADA3I-3K52203)	Dipole	1	1.2589	15.443	35.02	20	0.0877	0.00877
11g					18.412	69.37	20	0.1737	0.01737

WARNING:

It is the responsibility of the installer to ensure that the EUT is a notebook PC with a WLAN card and a specified antenna inside. Only the specified antenna 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 ADVANCED-CONNECTEK INC Dipole antenna p/n:ADA3I-3K52203 in a fixed-mount configuration, installed with a maximum of 18.412dBm 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: 11/21/2003
Next Cal. Date: 11/21/2004

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