

**CLASS II PERMISSIVE CHANGE
MEASUREMENT REPORT**
of
Wireless Ethernet Router

Applicant : ASUSTek Computer Inc.
EUT : Wireless Router
Model No. : WL-550gE
FCC ID : MSQWL550GE

Tested by :

Training Research Co., Ltd.

TEL : 886-2-26935155 FAX : 886-2-26934440

No. 255, Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C.

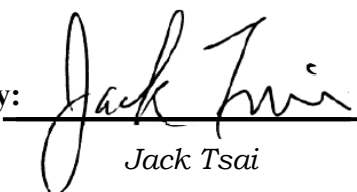
CERTIFICATION

We here by verify that:

The test data, data evaluation, test procedures and equipment configurations shown in this report were made mainly in accordance with the procedures given in ANSI C63.4 (2003) as a reference. All test were conducted by *Training Research Co., Ltd.*, 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Also, we attest to the accuracy of each.

We further submit that the energy emitted by the sample EUT tested as described in the report is **in compliance with** the technical requirements set forth in the FCC Rules Part 15 Subpart B (Declaration of Conformity) and C Section 15.247.

Applicant : ASUSTek Computer Inc.
Applicant Address : 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
Product Name : ASUS Wireless Router
Model : WL-550gE
Report No. : A5415051053
Test Date : February 20, 2006

Prepared by: 
Jack Tsai

Approved by: 
Frank Tsai

Conditions of issue :

- (1) **This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.**
- (2) **This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.**
- (3) **This test report, measurements made by TRC are traceable to the NIST only Conducted and Radiated Method.**



Federal Communications Commission

Declaration of Conformity

for the following equipment:

Product name : ASUS Wireless Router
Trade name : ASUS
Model name : WL-550gE

Is herewith confirmed and found to comply with the requirements of CFR 47 part15 Subpart B - Unintentional Radiators regulation. The results of electromagnetic mission evaluation are shown in the report number : A5415051053

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received,
including interference that may cause undesired operation

| Manufacturer | USA local representative |
|---|---------------------------------|
| Company name: ASUSTeK Computer Inc. | To be determined |
| Computer address: 4/F, 150, Li-Te Rd., Peitou, Taipei, Taiwan | |
| ZIP / Postal code 112 | |
| Contact person: Lawrence Yu | |
| Title: Manager | |
| Internet e-mail address: lawrence_yu@asus.com.tw | |
| Tel / Fax: 886-2-28943447 / 886-2-28950113 | |

Tables of Contents

| | |
|---|----|
| I. GENERAL | 5 |
| 1.1 Introduction | 5 |
| 1.2 Description of EUT | 5 |
| 1.3 Test method | 6 |
| 1.4 Description of Support Equipment | 6 |
| 1.5 Configuration of System Under Test | 9 |
| 1.6 Verify the Frequency and Channel | 11 |
| 1.7 Test Procedure | 12 |
| 1.8 Location of the Test Site | 12 |
| 1.9 General Test Condition | 12 |
| II. Section 15.101(a) : Equipment Authorization of Unintentional Radiators | 13 |
| III. Section 15.207 : Power Line Conducted Emissions for AC Powered Units | 14 |
| 3.1 Test Condition & Setup | 14 |
| 3.2 List of Test Instruments | 15 |
| 3.3 Test Result of Conducted Emissions | 16 |
| Standby mode | 16 |
| IEEE 802.11b | 17 |
| IEEE 802.11g | 18 |
| IV. Section 15.247(c) : Spurious Emissions (Radiated) | 20 |
| 4.1 Test Condition & Setup | 20 |
| 4.2 List of Test Instruments | 22 |
| 4.3 Test Result of Spurious Radiated Emissions | 23 |
| Standby mode | 23 |
| IEEE 802.11b CH01 | 25 |
| IEEE 802.11b CH06 | 27 |
| IEEE 802.11b CH11 | 29 |
| IEEE 802.11g CH01 | 31 |
| IEEE 802.11g CH06 | 33 |
| IEEE 802.11g CH11 | 35 |

I. GENERAL

1.1 Introduction

The following measurement report is submitted on behalf of applicant in support that the certification in accordance with Part 2 Subpart J and Part 15 Subpart A, B and C of the Commission's Rules and Regulations.

1.2 Description of EUT

| | | |
|-------------------------|---|--|
| FCC ID | : | MSQWL550GE |
| Product Name | : | ASUS Wireless Router |
| Model Name | : | WL-550gE |
| Frequency Range | : | 2.412GHz ~ 2.462GHz |
| Channel Spacing | : | 5MHz |
| Support Channel | : | 11 Channels |
| Modulation Skill | : | DBPSK, DQPSK, CCK, OFDM |
| Power Type | : | Powered by the switching adapter, Mfg.: UNIFIVE CO., LTD. Model: US300520 I/P: AC 100-240V 50/60Hz 0.3A O/P: DC 5V 2A 202cm length, non-shielded, no ferrite core |
| Data Cable | : | RJ45 cable x1, 60cm length, non-shielded, no ferrite core RJ45 cable x3, 3m length, non-shielded, no ferrite core RJ45 cable x1, 30m length, non-shielded, no ferrite core |

1.3 Test method

- 1.3.1 The WAN port connected to far HUB.
- 1.3.2 The LAN1, LAN2, and LAN3 ports are termination by RJ45 cables.
- 1.3.3 Connected the LAN4 port to the LAN interface of PC. Using PC and software provided by the manufacturer to control EUT, the test is performed under the specific conditions.
- 1.3.4 Set different data rate and channel (CH01/CH06/CH11) being tested and repeat the procedures above.
 - (a) Radiated for Intentional test:
 - making EUT to the mode of continuous transmission
 - (b) Conducted test and Radiated for unintentional test:
 - making EUT to the linking (Rx/Tx) mode with far support equipments

1.4 Description of Support Equipment

In order to construct the minimum testing, following equipment were used as the support units.

| | | |
|----------------|---|---|
| PC | : | IBM 8434 |
| Model No. | : | IVG |
| Serial No. | : | 99CCZG9 |
| FCC ID | : | N/A, DoC (Declaration of Confirmation) Approved |
| BSMI | : | R33026 |
| Power type | : | 100 ~ 127VAC/6A, 200 ~ 240VAC/3A, 50 ~ 60Hz, Switching |
| Power cord | : | Non-shielded, 1.8m length, Plastic hood, No ferrite core |
| | | |
| Monitor | : | HP 15' Color Monitor |
| Model No. | : | D8894A |
| Serial No. | : | CN02364355 |
| FCC ID | : | ARSCM356N |
| BSMI | : | 3882A031 |
| Power type | : | 100 ~ 240 VAC / 1.5A, 50 ~ 60 Hz, Switching |
| Power cord | : | Non-shielded, 1.80m length, Plastic hood, No ferrite core |
| Data cable | : | Shielded, 1.50m length, Plastic hood, with ferrite core |

Printer : **EPSON**
Model No. : B241A
Serial No. : FAPY155090
FCC ID : DoC Approved
BSMI : R33126
Power type : Switching adaptor
Power cord : Non-shielded, 198cm length, No ferrite core
Data cable : Shielded, 1.50m length, No ferrite core

PS/2 Mouse : **HP**
Model No. : M-S69
Serial No. : 334684-002 323614-001
FCC ID : DoC Approved
BSMI : R41126
Power type : By PC
Power cord : Shielded, 1.90m length, No ferrite core

PS/2 Keyboard : **HP**
Model No. : KB0133
Serial No. : B69360MGAPW0HF
FCC ID : DoC Approved
BSMI : R31310
Power type : By PC
Data cable : Shielded, 1.73m length, no ferrite core

Modem : **ACEEX**
Model No. : DM-1414
Serial No. : 9010583
FCC ID : IFAXDM1414
Power type : Linear
Power cord : Non-shielded, 1.9m length, No ferrite cord
Data cable : RS232, Shielded, 1.2m length, No ferrite core
RJ11C x 2, 7' length non-shielded, No ferrite core

USB Game pad : **Logitech**
Model No. : G-UC3B
Serial No. : AE3500500
FCC ID : DoC Approved
BSMI : 4902A047
Power Cable : Shielded, 187cm length, Plastic hood, No ferrite core.

LAN Card : **D-Link**
Model No. : DFE-530TX
Serial No. : 0050BAE32FF3, 0050BAE3158B
FCC ID : N/A, DoC Approved

Notebook PC : **IBM**
Model No. : 2373-IMV
Serial No. : 99R3H1H
FCC ID : DoC (Declaration of Confirmation) Approved
BSMI : R33026
DGT : 92LP0137

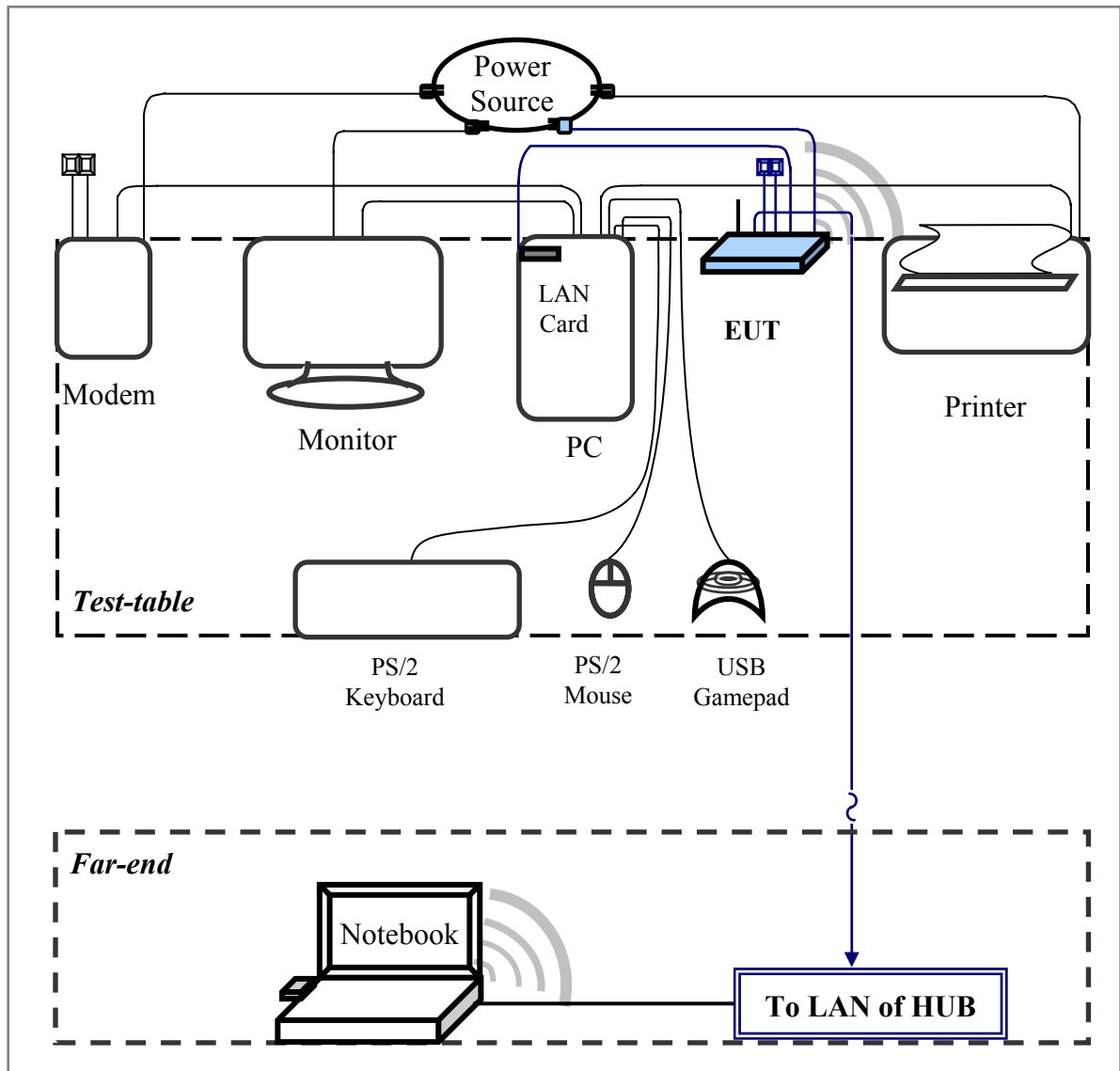
Power adaptor : **IBM**
Part No. : 08K8202
Serial No. : 11S08K8202Z1Z6LR459001A REV 06
BSMI : D33190
Power type : 100 ~ 240VAC / 50 ~ 60Hz, 1.5 ~ 0.5A, Switching
Power cord : Non-shielded, 1.0m length, Plastic hood, No ferrite core
(Main power to adaptor)
Power cord : Shielded, 1.84m length, Plastic hood, ferrite core
(DC plug to adaptor)

WLAN Card : **Gemtek Technology Co., Ltd.**
Model No. : C911003
FCC ID : MXF-C911003

Switching HUB : **ASUS**
Model No. : GX2048
Power type : Switching adaptor

1.5 Configuration of System Under Test

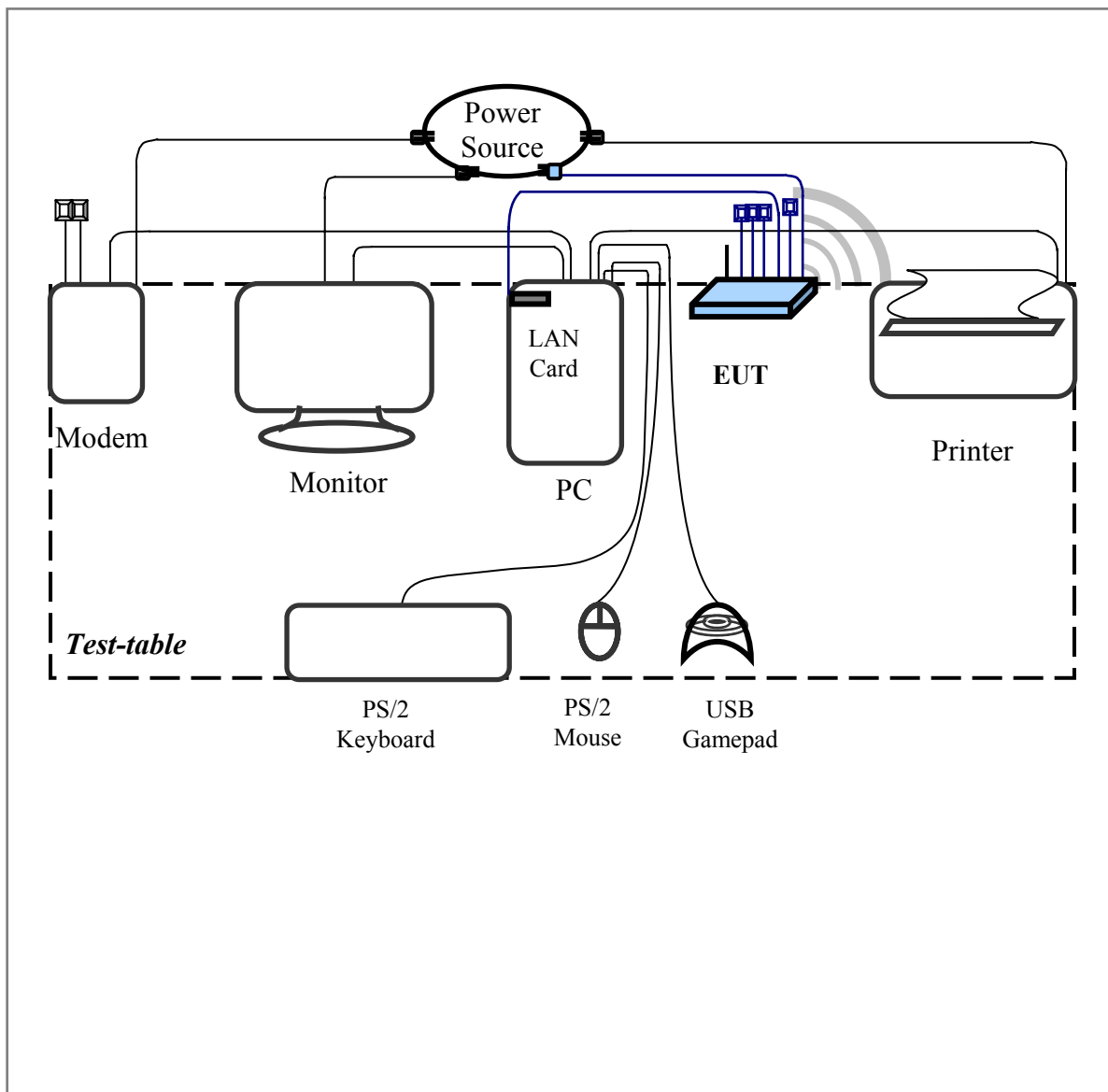
1.5.1 Conducted and Radiated for Unintentional



Connections of Equipment

- PC:** *Parallel Port a printer
- *VGA Port a monitor
- *Serial Port an external modem
- *USB Port a USB gamepad
- *PS/2-key Port a PS/2 keyboard
- *PS/2-mouse Port ... a PS/2 mouse
- *LAB Port **EUT**

1.5.2 Radiated of Intentional



The tests below are carried with the EUT transmitter set at high power in TDD mode. The EUT is forced to select of output power level and channel number by LAN port.

The setting up procedure was recorded in 1.3 test method.

1.6 Verify the Frequency and Channel

| Channel | Frequency (GHz) |
|---------|-----------------|
| 1 | 2.412 |
| 2 | 2.417 |
| 3 | 2.422 |
| 4 | 2.427 |
| 5 | 2.432 |
| 6 | 2.437 |
| 7 | 2.442 |
| 8 | 2.447 |
| 9 | 2.452 |
| 10 | 2.457 |
| 11 | 2.462 |

Note:

1. This is for confirming that all frequencies are in 2.412GHz to 2.462GHz.
2. Section 15.31(m): Measurements on intentional radiators or receivers shall be performed at three frequencies for operating frequency range over 10 MHz
(The locations of these frequencies one near the top, one near the middle and one near the bottom.)
3. After test, the EUT operating frequencies are in 2.412GHz to 2.462GHz. So all the items as followed in testing report are need to test these three frequencies:
Top: Channel – 1; Middle: Channel – 6; Bottom: Channel – 11.

1.7 Test Procedure

All measurements contained in this report were performed mainly according to the techniques described in ANSI C63.4 (2003) and the pre-setup was written on 1.3 test method, the detail setup was written on each test item.

1.8 Location of the Test Site

The radiated emissions measurements required by the rules were performed on the **three-meter, Anechoic Chamber (FCC Registration Number: 93906)** maintained by *Training Research Co., Ltd.* 1F, No. 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Complete description and measurement data have been placed on file with the commission. The conducted power line emissions tests and other test items were performed in a anechoic chamber also located at Training Research Co., Ltd.

No. 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. *Training Research Co., Ltd.* is listed by the FCC as a facility available to do measurement work for others on a contract basis.

1.9 General Test Condition

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests were chosen as that which produced the highest emission levels. However, only those conditions, which the EUT was considered likely to encounter in normal use were investigated.

In test, they were set in high power and continuously transmitting mode that controlled by computer. The ch01, ch06 and ch11 of EUT were all tested. The setting up procedure is recorded on 1.3 test method.

II. Section 15.101(a): Equipment authorization of unintentional radiators

The EUT equipped with a LAN interface and should be operated with the computer. It was categorized to *Class B personal computers and peripherals* as cannot be operated stand-alone. The authorization requires **Declaration of Conformity (DoC)** and the items required such as Section15.107 (Conducted limits) and Section15.109 (Radiated emission limits) is same as Section15.207 and 15.247(C).

III. Section 15.207: Power Line Conducted Emissions for AC Powered Units

3.1 Test Condition & Setup

The power line conducted emission measurements were performed in an anechoic chamber. The EUT was assembled on a wooden table, which is 80 centimeters high, was placed 40 centimeters from the backwall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and Line Impedance Stabilization Networks (LISNs). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer (or EMI receiver) was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak and average detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 4.3

There is a test condition apply in this test item, the test procedure description as <1.3>. Three channels were tested, one in the top (CH01), one in the middle (CH06) and the other in bottom (CH11).

3.2 List of Test Instruments

| Instrument Name | Model | Brand | Serial No. | Calibration Date |
|------------------------------|---------------------|--------------------|---------------------|------------------|
| | | | | Next time |
| EMI Receiver | 8546A | HP | 3520A00242 | 06/01/06 |
| RF Filter Section | 85460A | HP | 3448A00217 | 06/01/06 |
| LISN (EUT) | LISN-01 | TRC | 99-05 | 12/10/06 |
| LISN (Support E.) | LISN-01 | TRC | 9912-03, 04 | 11/26/06 |
| Pre-amplifier | 15542 ZFL-500 | Mini – Circuits | 0 0117 | 05/20/06 |
| 6dB Attenuator | MCL BW-S6W2 | Mini – Circuits | 9915 – Conducted | 05/20/06 |
| 10dB Attenuator | A5542 VAT010 | Mini – Circuits | 0215 – Conducted | 05/20/06 |
| Coaxial Cable (2 meter) | A30A30-0058-50FS-2M | Jyebao | SMA-08 | 05/20/06 |
| Coaxial Cable (1.1 meter) | A30A30-0058-50FS-1M | Jyebao | SMA-09 | 05/20/06 |
| Coaxial Cable (20 meter) | RG-214/U | Jyebao | NP-01 | 05/20/06 |
| Coaxial Cable (20 meter) | RG-214/U | Jyebao | NP-02 | 05/20/06 |
| Auto Switch Box (< 30MHz) | ASB-01 | TRC | 9904-01 | 05/20/06 |

3.3 Test Result of Power Line Conducted Emissions

The following table shows a summary of the highest emissions of power line conducted emissions on the LIVE and NETURAL conductors of the EUT power cord. Show as follows.

Test Conditions: Temperature : 25 °C Humidity : 73 % RH

Test mode: Standby mode

| <i>Power Connected Emissions</i> | | | | | <i>Class B</i> | | |
|----------------------------------|----------------------------|------------------------|----------------------|---------------------------|----------------------------|-----------------------------|------------------------|
| <i>Conductor</i> | <i>Frequency (KHz)</i> | <i>Peak (dBµV)</i> | <i>QP (dBµV)</i> | <i>Average (dBµV)</i> | <i>QP-limit (dBµV)</i> | <i>AVG-limit (dBµV)</i> | <i>Margin (dB)</i> |
| Line 1 | 186.745 | 57.42 | 51.63 | 33.75 | 64.77 | 54.77 | -13.14 |
| | 491.930 | 44.63 | 42.79 | 28.33 | 56.43 | 46.43 | -13.64 |
| | 858.000 | 42.08 | --- | --- | 56.00 | 46.00 | -3.92 |
| | 1153.515 | 43.70 | 42.37 | 25.48 | 56.00 | 46.00 | -13.63 |
| | 1437.000 | 42.76 | --- | --- | 56.00 | 46.00 | -3.24 |
| | 3157.890 | 44.48 | 41.95 | 26.04 | 56.00 | 46.00 | -14.05 |
| Line 2 | 192.370 | 57.23 | 55.92 | 41.18 | 64.77 | 54.77 | -8.85 |
| | 238.000 | 49.18 | --- | --- | 63.49 | 53.49 | -4.31 |
| | 494.000 | 42.48 | --- | --- | 56.17 | 46.17 | -3.69 |
| | 587.000 | 42.81 | --- | --- | 56.00 | 46.00 | -3.19 |
| | 3285.000 | 41.54 | --- | --- | 56.00 | 46.00 | -4.46 |
| | 19620.000 | 44.73 | --- | --- | 60.00 | 50.00 | -5.27 |

NOTE:

- (1) Margin = Peak Amplitude – Limit, *The reading amplitudes are all under limit.*
- (2) A "+" sign in the margin column means the emission is OVER the Class B Limit and "-" sign of means UNDER the Class B limit

Test mode: IEEE 802.11b Channel 1

| <i>Power Connected Emissions</i> | | | | | <i>Class B</i> | | |
|----------------------------------|------------------------|--------------------|------------------|-----------------------|------------------------|-------------------------|--------------------|
| <i>Conductor</i> | <i>Frequency (KHz)</i> | <i>Peak (dBμV)</i> | <i>QP (dBμV)</i> | <i>Average (dBμV)</i> | <i>QP-limit (dBμV)</i> | <i>AVG-limit (dBμV)</i> | <i>Margin (dB)</i> |
| Line 1 | 186.360 | 58.43 | 51.81 | 31.48 | 64.71 | 54.71 | -12.90 |
| | 485.220 | 44.70 | 42.09 | 28.79 | 56.57 | 46.57 | -14.48 |
| | 759.675 | 44.25 | 41.75 | 28.95 | 56.00 | 46.00 | -14.25 |
| | 1526.865 | 43.95 | 41.61 | 24.76 | 56.00 | 46.00 | 14.39 |
| | 3164.390 | 44.77 | 42.30 | 26.03 | 56.00 | 46.00 | 13.70 |
| | 20300.000 | 44.98 | --- | --- | 60.00 | 50.00 | -5.02 |
| Line 2 | 183.800 | 59.01 | 46.56 | 23.31 | 64.83 | 54.83 | -18.27 |
| | 494.000 | 42.59 | --- | --- | 56.17 | 46.17 | -3.58 |
| | 592.000 | 41.99 | --- | --- | 56.00 | 46.00 | -4.01 |
| | 1269.000 | 42.85 | --- | --- | 56.00 | 46.00 | -3.15 |
| | 1661.000 | 41.96 | --- | --- | 56.00 | 46.00 | -4.04 |
| | 3317.000 | 42.31 | --- | --- | 56.00 | 46.00 | -3.69 |

Test mode: IEEE 802.11b Channel 6

| <i>Power Connected Emissions</i> | | | | | <i>Class B</i> | | |
|----------------------------------|------------------------|--------------------|------------------|-----------------------|------------------------|-------------------------|--------------------|
| <i>Conductor</i> | <i>Frequency (KHz)</i> | <i>Peak (dBμV)</i> | <i>QP (dBμV)</i> | <i>Average (dBμV)</i> | <i>QP-limit (dBμV)</i> | <i>AVG-limit (dBμV)</i> | <i>Margin (dB)</i> |
| Line 1 | 186.185 | 57.23 | 51.23 | 32.17 | 64.83 | 54.83 | -13.60 |
| | 778.930 | 44.18 | 41.32 | 23.36 | 56.00 | 46.00 | -14.68 |
| | 1156.755 | 44.41 | 43.05 | 27.55 | 56.00 | 46.00 | -12.95 |
| | 1959.000 | 40.69 | --- | --- | 56.00 | 46.00 | -5.31 |
| | 3160.800 | 44.86 | 42.30 | 26.46 | 56.00 | 46.00 | -13.70 |
| | 20300.000 | 45.35 | --- | --- | 60.00 | 50.00 | -4.65 |
| Line 2 | 188.540 | 56.65 | 54.03 | 36.59 | 64.66 | 54.66 | -10.63 |
| | 291.000 | 45.07 | --- | --- | 61.97 | 51.97 | -6.90 |
| | 499.000 | 41.78 | --- | --- | 56.03 | 46.03 | -4.25 |
| | 1678.000 | 40.43 | --- | --- | 56.00 | 46.00 | -5.57 |
| | 3317.000 | 42.06 | --- | --- | 56.00 | 46.00 | -3.94 |
| | 20200.000 | 44.89 | --- | --- | 60.00 | 50.00 | -5.11 |

Test mode: IEEE 802.11b Channel 11

| <i>Power Connected Emissions</i> | | | | | <i>Class B</i> | | |
|----------------------------------|------------------------|--------------------|------------------|-----------------------|------------------------|-------------------------|--------------------|
| <i>Conductor</i> | <i>Frequency (KHz)</i> | <i>Peak (dBμV)</i> | <i>QP (dBμV)</i> | <i>Average (dBμV)</i> | <i>QP-limit (dBμV)</i> | <i>AVG-limit (dBμV)</i> | <i>Margin (dB)</i> |
| Line 1 | 188.500 | 56.63 | 52.76 | 37.28 | 64.77 | 54.77 | -12.01 |
| | 493.690 | 45.14 | 43.51 | 29.22 | 56.29 | 46.29 | -12.78 |
| | 880.815 | 44.58 | 41.66 | 24.55 | 56.00 | 46.00 | -14.34 |
| | 1801.000 | 42.31 | --- | --- | 56.00 | 46.00 | -3.69 |
| | 3061.510 | 44.70 | 42.37 | 26.85 | 56.00 | 46.00 | -13.63 |
| | 19620.000 | 44.66 | --- | --- | 60.00 | 50.00 | -5.34 |
| Line 2 | 184.565 | 58.75 | 45.75 | 22.81 | 64.83 | 54.83 | -19.08 |
| | 294.000 | 45.14 | --- | --- | 61.89 | 51.89 | -6.75 |
| | 494.135 | 45.35 | 40.46 | 27.08 | 56.17 | 46.17 | -15.71 |
| | 887.330 | 44.93 | 40.76 | 24.44 | 56.00 | 46.00 | -15.24 |
| | 1269.000 | 39.82 | --- | --- | 56.00 | 46.00 | -6.18 |
| | 2925.000 | 41.78 | --- | --- | 56.00 | 46.00 | -4.22 |

Test mode: IEEE 802.11g Channel 1

| <i>Power Connected Emissions</i> | | | | | <i>Class B</i> | | |
|----------------------------------|------------------------|--------------------|------------------|-----------------------|------------------------|-------------------------|--------------------|
| <i>Conductor</i> | <i>Frequency (KHz)</i> | <i>Peak (dBμV)</i> | <i>QP (dBμV)</i> | <i>Average (dBμV)</i> | <i>QP-limit (dBμV)</i> | <i>AVG-limit (dBμV)</i> | <i>Margin (dB)</i> |
| Line 1 | 187.690 | 56.95 | 52.52 | 30.89 | 64.77 | 54.77 | -12.25 |
| | 495.620 | 45.35 | 43.51 | 29.21 | 56.17 | 46.17 | -12.66 |
| | 674.000 | 42.06 | --- | --- | 56.00 | 46.00 | -3.94 |
| | 882.480 | 44.61 | 41.51 | 23.58 | 56.00 | 46.00 | -14.49 |
| | 1553.645 | 44.48 | 42.65 | 27.07 | 56.00 | 46.00 | -13.35 |
| | 3174.295 | 44.79 | 42.27 | 26.38 | 56.00 | 46.00 | -13.73 |
| Line 2 | 184.925 | 56.65 | 45.13 | 21.64 | 64.83 | 54.83 | -19.70 |
| | 294.000 | 45.49 | --- | --- | 61.89 | 51.89 | -6.40 |
| | 499.000 | 41.66 | --- | --- | 56.03 | 46.03 | -4.37 |
| | 795.000 | 41.42 | --- | --- | 56.00 | 46.00 | -4.58 |
| | 1190.330 | 44.48 | 40.61 | 21.66 | 56.00 | 46.00 | -15.39 |
| | 3158.000 | 42.31 | --- | --- | 56.00 | 46.00 | -3.69 |

Test mode: IEEE 802.11g Channel 6

| Power Connected Emissions | | | | | Class B | | |
|----------------------------------|------------------------|--------------------|------------------|-----------------------|------------------------|-------------------------|--------------------|
| Conductor | Frequency (KHz) | Peak (dBμV) | QP (dBμV) | Average (dBμV) | QP-limit (dBμV) | AVG-limit (dBμV) | Margin (dB) |
| Line 1 | 185.870 | 57.09 | 50.99 | 28.97 | 64.83 | 54.83 | -13.84 |
| | 494.455 | 45.19 | 42.37 | 28.36 | 56.29 | 46.29 | -13.92 |
| | 769.455 | 44.20 | 41.86 | 28.03 | 56.00 | 46.00 | -14.14 |
| | 1146.790 | 44.39 | 43.01 | 27.55 | 56.00 | 46.00 | -12.99 |
| | 1438.305 | 44.20 | 42.34 | 26.01 | 56.00 | 46.00 | -13.66 |
| | 2949.985 | 44.82 | 41.84 | 26.80 | 56.00 | 46.00 | -14.16 |
| Line 2 | 180.765 | 57.02 | 43.97 | 10.90 | 64.89 | 54.89 | -20.92 |
| | 297.000 | 45.35 | --- | --- | 61.80 | 51.80 | -6.45 |
| | 494.000 | 42.64 | --- | --- | 56.17 | 46.17 | -3.53 |
| | 688.000 | 42.04 | --- | --- | 56.00 | 46.00 | -3.96 |
| | 989.000 | 41.68 | --- | --- | 56.00 | 46.00 | -4.32 |
| | 1282.000 | 41.38 | --- | --- | 56.00 | 46.00 | -4.62 |

Test mode: IEEE 802.11g Channel 11

| Power Connected Emissions | | | | | FCC Class B | | |
|----------------------------------|------------------------|--------------------|------------------|-----------------------|------------------------|-------------------------|--------------------|
| Conductor | Frequency (KHz) | Peak (dBμV) | QP (dBμV) | Average (dBμV) | QP-limit (dBμV) | AVG-limit (dBμV) | Margin (dB) |
| Line 1 | 187.510 | 57.07 | 51.45 | 33.37 | 64.77 | 54.77 | -13.32 |
| | 484.725 | 44.93 | 42.47 | 30.82 | 56.57 | 46.57 | -14.10 |
| | 886.700 | 44.63 | 42.96 | 26.55 | 56.00 | 46.00 | -13.04 |
| | 1167.270 | 44.36 | 40.56 | 20.09 | 56.00 | 46.00 | -15.44 |
| | 1409.965 | 44.39 | 41.82 | 9.74 | 56.00 | 46.00 | -14.18 |
| | 3140.725 | 44.65 | 41.99 | 23.85 | 56.00 | 46.00 | -14.01 |
| Line 2 | 186.385 | 58.36 | 50.96 | 29.66 | 64.77 | 54.77 | -13.81 |
| | 285.000 | 44.89 | --- | --- | 62.14 | 52.14 | -7.25 |
| | 394.000 | 41.54 | --- | --- | 59.03 | 49.03 | -7.49 |
| | 495.000 | 45.79 | 40.81 | 22.81 | 56.03 | 46.03 | -15.22 |
| | 1081.000 | 42.85 | --- | --- | 56.00 | 46.00 | -3.15 |
| | 3126.000 | 40.14 | --- | --- | 56.00 | 46.00 | -5.86 |

IV. Section 15.247 (C): Spurious Emissions (Radiated)

4.1 Test Condition & Setup

We'd performed the test by the *radiated emission* skill: The EUT was placed in an anechoic chamber, and set the EUT transmitting continuously and scanned at 3-meter distance to determine its emission characteristics. The physical arrangement of the EUT was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude, directivity, and frequency. The exact system configuration, which produced the highest emissions was noted so it could be reproduced later during the final tests. For the measurement above 1GHz, according to the guidance we'd set the spectrum analyzer's 6dB bandwidth RBW to 1MHz.

This was done to ensure that the final measurements would demonstrate the worst-case interference potential of the EUT.

Final radiation measurements were made on a three-meter, anechoic chamber. The EUT system was placed on a nonconductive turntable, which is 0.8 meters height, top surface 1.0 x 1.5 meter.

The spectrum was examined from 30MHz to 1000MHz using an Hewlett Packard 85460A EMI Receiver, SCHWARZECK whole range Small Biconical Antenna (Model No.: UBAA9114 & BBVU9135) is used to measure frequency from 30 MHz to 1GHz. The final test is used the HP 85460A spectrum and 8564E spectrum was examined from 1GHz to 25GHz using an Hewlett Packard Spectrum Analyzer, EMCO/HP Horn Antenna (Model 3115 / 84125-80008) for 1G - 25GHz.

At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. There are two spectrum analyzers use on this testing, HP 85460A for frequency 30MHz to 1000MHz, and 8564E for frequency 1GHz to 25GHz. No post-detector video filters were used in the test. The spectrum analyzer's 6dB bandwidth was set to 120KHz (spectrum was examined from 30 MHz to 1000 MHz), the spectrum analyzer's 6 dB bandwidth was set to 1 MHz (spectrum was examined from 1GHz to 25GHz) and the analyzer was operated in the maximum hold mode. There is a test condition applies in this test item, the test procedure description as the following:

Three channels were tested, one in the top (CH01), one in the middle (CH06) and the other in bottom (CH11). The setting up procedure is recorded on <1.3>

With the transmitter operating from a AC source and using the internal of EUT, radiates spurious emissions falling within the restricted bands of 15.209 were measured at operating frequencies corresponding to upper, middle and bottom channels in the 2400 ~ 2483.5 MHz band.

The actual field intensity in decibels referenced to 1 microvolt per meter (dB μ V/m) is determined by algebraically adding the measured reading in dB μ V, the antenna factor (dB), and cable loss (dB) at the appropriate frequency. Since the EUT was set to transmit continuously, no *duty cycle* is present.

For frequency between 30MHz to 1000MHz

$$F_{Ia} \text{ (dBuV/m)} = F_{Ir} \text{ (dB}\mu\text{V)} + \text{Correction Factors}$$

F_{Ia} : Actual Field Intensity

F_{Ir} : Reading of the Field Intensity

Correction Factors = Antenna Factor + (Cable Loss – Amplifier Gain) + Switching Box Loss

For frequency between 1GHz to 25GHz

$$F_{Ia} \text{ (dB}\mu\text{V/m)} = F_{Ir} \text{ (dB}\mu\text{V)} + \text{Correction Factor}$$

F_{Ia} : Actual Field Intensity

F_{Ir} : Reading of the Field Intensity

Correction Factors = Antenna Factor + (Cable Loss – Amplifier Gain) + Switching Box Loss

4.2 List of Test Instruments

| Instrument Name | Model | Brand | Serial No. | Calibration Date |
|---|----------------------|------------|------------|------------------|
| | | | | Next time |
| EMI Receiver | 8546A | HP | 3520A00242 | 06/01/06 |
| RF Filter Section | 85460A | HP | 3448A00217 | 06/01/06 |
| Small Biconical Antenna | UBAA9114 & BBVU9135 | SCHWARZECK | 127 | 08/17/06 |
| Pre-amplifier | PA1F | TRC | 1FAC | 05/20/06 |
| Auto Switch Box (>30MHz) | ASB-01 | TRC | 9904-01 | 05/20/06 |
| Coaxial Cable (Double shielded, 15 meter) | A30A30-0058-50FS-15M | JYEBAO | SMA-01 | 05/20/06 |
| Coaxial Cable (1.1 meter) | A30A30-0058-50FS-1M | JYEBAO | SMA-02 | 05/20/06 |
| Spectrum Analyze | 8564E | HP | 3720A00840 | 11/07/06 |
| Microwave Preampfier | 84125C | HP | US36433002 | 11/07/06 |
| Horn Antenna | 3115 | EMCO | 9104-3668 | 01/23/07 |
| Standard Guide Horn Antenna | 84125-80008 | HP | 18-26.5GHz | 11/09/06 |
| Standard Guide Horn Antenna | 84125-80001 | HP | 26.5-40GHz | 11/09/06 |
| Horn Antenna | 1196E (3115) | HP (EMCO) | 9704-5178 | 04/11/06 |
| Pre-amplifier | PA2F | TRC | 2F1GZ | 06/20/06 |
| Coaxial Cable (3 miter) | A30A30-0058-50FST118 | JYEBAO | MSA-05 | 06/20/06 |
| Coaxial Cable (1 meter) | A30A30-0058-50FST118 | JYEBAO | MSA-04 | 06/20/06 |

4.3 Test Result of Spurious Radiated Emissions

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarizations, EUT orientation, etc. are recorded on the following.

Test Conditions: Temperature : 25 ° C Humidity : 73 % RH

Test mode: Standby mode for 30MHz to 1GHz [Horizontal]

| Radiated Emission | | | | Correction Factors (dB) | Corrected Amplitude (dBµV/m) | Class B (3 m) | |
|-------------------|------------------|-------------|-----------|-------------------------|------------------------------|----------------|-------------|
| Frequency (MHz) | Amplitude (dBµV) | Ant. H. (m) | Table () | | | Limit (dBµV/m) | Margin (dB) |
| 93.05 | 32.81 | 1.00 | 310 | -0.29 | 32.52 | 43.50 | -10.98 |
| 403.45 | 41.38 | 1.00 | 98 | -1.06 | 40.32 | 46.00 | -5.68 |
| 504.09 | 35.91 | 1.00 | 47 | 2.47 | 38.38 | 46.00 | -7.62 |
| 700.51 | 26.88 | 1.00 | 213 | 9.31 | 36.19 | 46.00 | -9.81 |
| 801.15 | 29.35 | 1.00 | 171 | 12.03 | 41.38 | 46.00 | -4.62 |
| 900.58 | 27.03 | 1.00 | 168 | 14.76 | 41.79 | 46.00 | -4.21 |

Test mode: Standby mode for 30MHz to 1GHz [Vertical]

| Radiated Emission | | | | Correction Factors (dB) | Corrected Amplitude (dBµV/m) | Class B (3 m) | |
|-------------------|------------------|-------------|-----------|-------------------------|------------------------------|----------------|-------------|
| Frequency (MHz) | Amplitude (dBµV) | Ant. H. (m) | Table () | | | Limit (dBµV/m) | Margin (dB) |
| 39.56 | 25.96 | 1.00 | 333 | 5.60 | 31.56 | 40.00 | -8.44 |
| 101.54 | 36.61 | 1.00 | 286 | -1.01 | 35.60 | 43.50 | -7.90 |
| 601.09 | 34.63 | 1.00 | 75 | 6.30 | 40.93 | 46.00 | -5.07 |
| 700.51 | 29.73 | 1.00 | 151 | 9.31 | 39.04 | 46.00 | -6.96 |
| 751.44 | 28.06 | 1.00 | 144 | 10.23 | 38.29 | 46.00 | -7.71 |
| 900.00 | 26.06 | 1.00 | 264 | 14.75 | 40.81 | 46.00 | -5.19 |

Note:

1. Margin = Amplitude – limit, if margin is minus means under limit.
2. Corrected Amplitude = Reading Amplitude + Correction Factors
3. Correction factor = Antenna factor + (Cable Loss – Amplitude gain) + Switching Box Loss

Test mode: Standby mode for 1GHz to 25GHz [Horizontal]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|----------------|---------------|--------------------|-----|--------------------------|----------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1991.67 | 1.00 | 160 | 32.74 | --- | 4.19 | 36.93 | --- | 73.96 | 53.96 | -17.03 |
| 3734.17 | 1.00 | 335 | 31.07 | --- | 11.34 | 42.41 | --- | 73.96 | 53.96 | -11.55 |
| 7176.67 | 1.00 | 57 | 25.24 | --- | 21.27 | 46.51 | --- | 73.96 | 53.96 | -7.45 |
| 11462.08 | 1.00 | 93 | 25.24 | --- | 21.71 | 46.95 | --- | 73.96 | 53.96 | -7.01 |
| 22012.71 | 1.00 | 47 | 47.49 | --- | 2.78 | 50.27 | --- | 73.96 | 53.96 | -3.69 |

Test mode: Standby mode for 1GHz to 25GHz [Vertical]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|----------------|---------------|--------------------|-----|--------------------------|----------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 2190.00 | 1.00 | 99 | 33.41 | --- | 5.26 | 38.67 | --- | 73.96 | 53.96 | -15.29 |
| 3500.42 | 1.00 | 301 | 30.41 | --- | 10.40 | 40.81 | --- | 73.96 | 53.96 | -13.15 |
| 5922.92 | 1.00 | 7 | 24.90 | --- | 17.82 | 42.72 | --- | 73.96 | 53.96 | -11.24 |
| 9974.58 | 1.00 | 182 | 23.08 | --- | 22.94 | 46.02 | --- | 73.96 | 53.96 | -7.94 |
| 19547.71 | 1.00 | 230 | 46.99 | --- | 1.70 | 48.69 | --- | 73.96 | 53.96 | -5.27 |

Note:

1. Margin = Corrected - Limit.
2. The EUT utilizes a *permanently attached antenna*. In addition the spurious RF radiated emissions levels do comply with the *20dBc limit* both at its bandedges and other spurious emissions.
3. As stated in Section 15.35(b), for any frequencies above 1000MHz, radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. As the results of our test, the peak amplitudes are already below the FCC limit. Thus the average amplitudes of the rest are omitted.

Test mode: IEEE 802.11b CH01 for 30MHz to 1GHz [Horizontal]

| <i>Radiated Emission</i> | | | | <i>Correction Factors</i> | <i>Corrected Amplitude</i> | <i>Class B (3 m)</i> | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| <i>Frequency (MHz)</i> | <i>Amplitude (dBμV)</i> | <i>Ant. H. (m)</i> | <i>Table ()</i> | | | <i>Limit (dBμV/m)</i> | <i>Margin (dB)</i> |
| 253.10 | 42.94 | 1.00 | 44 | -3.75 | 39.19 | 46.00 | -6.81 |
| 302.81 | 40.90 | 1.00 | 34 | -3.30 | 37.60 | 46.00 | -8.40 |
| 403.45 | 39.64 | 1.00 | 192 | -1.06 | 38.58 | 46.00 | -7.42 |
| 504.09 | 40.46 | 1.00 | 172 | 2.47 | 42.93 | 46.00 | -3.07 |
| 700.51 | 33.29 | 1.00 | 142 | 9.31 | 42.60 | 46.00 | -3.40 |
| 900.58 | 26.92 | 1.00 | 194 | 14.76 | 41.68 | 46.00 | -4.32 |

Test mode: IEEE 802.11b CH01 for 30MHz to 1GHz [Vertical]

| <i>Radiated Emission</i> | | | | <i>Correction Factors</i> | <i>Corrected Amplitude</i> | <i>Class B (3 m)</i> | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| <i>Frequency (MHz)</i> | <i>Amplitude (dBμV)</i> | <i>Ant. H. (m)</i> | <i>Table ()</i> | | | <i>Limit (dBμV/m)</i> | <i>Margin (dB)</i> |
| 101.54 | 37.15 | 1.00 | 141 | -1.01 | 36.14 | 43.50 | -7.36 |
| 567.14 | 31.41 | 1.00 | 190 | 5.16 | 36.57 | 46.00 | -9.43 |
| 625.34 | 34.32 | 1.00 | 128 | 7.18 | 41.50 | 46.00 | -4.50 |
| 700.51 | 31.98 | 1.00 | 308 | 9.31 | 41.29 | 46.00 | -4.71 |
| 801.15 | 26.01 | 1.00 | 329 | 12.03 | 38.04 | 46.00 | -7.96 |
| 901.79 | 26.60 | 1.00 | 249 | 14.79 | 41.39 | 46.00 | -4.61 |

Test mode: IEEE 802.11b CH01 for 1GHz to 25GHz [Horizontal]

| Frequency | Ant. H. | Table | Amplitude | | Correction Factor | Corrected Amplitude | | Limit | | Margin |
|-----------|------------|--------|-------------|-----|----------------------|------------------------|-----|-------------|-------|--------|
| | | | Peak / Ave. | | | Peak / Ave. | | Peak / Ave. | | |
| MHz | m | degree | dBμV | | dB/m | dBμV/m | | dBμV/m | | dB |
| 1652.08 | 1.00 | 343 | 35.83 | --- | 13.52 | 49.35 | --- | 73.96 | 53.96 | -4.61 |
| 1993.75 | 1.00 | 209 | 37.00 | --- | 8.19 | 45.19 | --- | 73.96 | 53.96 | -8.77 |
| 2279.17 | 1.00 | 182 | 34.00 | --- | 8.87 | 42.87 | --- | 73.96 | 53.96 | -11.09 |
| 7233.75 | 1.00 | 245 | 37.28 | --- | 10.07 | 47.35 | --- | 73.96 | 53.96 | -6.61 |
| 9650.42 | 1.00 | 58 | 35.44 | --- | 11.47 | 46.91 | --- | 73.96 | 53.96 | -7.05 |

Test mode: IEEE 802.11b CH01 for 1GHz to 25GHz [Vertical]

| Frequency | Ant. H. | Table | Amplitude | | Correction Factor | Corrected Amplitude | | Limit | | Margin |
|-----------|------------|--------|-------------|-----|----------------------|------------------------|-----|-------------|-------|--------|
| | | | Peak / Ave. | | | Peak / Ave. | | Peak / Ave. | | |
| MHz | m | degree | dBμV | | dB/m | dBμV/m | | dBμV/m | | dB |
| 1608.33 | 1.00 | 266 | 36.83 | --- | 14.20 | 51.03 | --- | 73.96 | 53.96 | -2.93 |
| 1989.58 | 1.00 | 295 | 37.67 | --- | 8.25 | 45.92 | --- | 73.96 | 53.96 | -8.04 |
| 2279.17 | 1.00 | 145 | 42.00 | --- | 8.87 | 50.87 | --- | 73.96 | 53.96 | -3.09 |
| 2552.08 | 1.00 | 227 | 39.66 | --- | 9.59 | 49.25 | --- | 73.96 | 53.96 | -4.71 |
| 9650.42 | 1.00 | 113 | 35.94 | --- | 11.47 | 47.41 | --- | 73.96 | 53.96 | -6.55 |
| 12061.04 | 1.00 | 273 | 37.94 | --- | 9.81 | 47.75 | --- | 73.96 | 53.96 | -6.21 |

Test mode: IEEE 802.11b CH06 for 30MHz to 1GHz [Horizontal]

| Radiated Emission | | | | Correction Factors | Corrected Amplitude | Class B (3 m) | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| Frequency (MHz) | Amplitude (dBμV) | Ant. H. (m) | Table () | | | Limit (dBμV/m) | Margin (dB) |
| 253.10 | 42.66 | 1.00 | 44 | -3.75 | 38.91 | 46.00 | -7.09 |
| 403.45 | 39.50 | 1.00 | 199 | -1.06 | 38.44 | 46.00 | -7.56 |
| 504.09 | 40.21 | 1.00 | 188 | 2.47 | 42.68 | 46.00 | -3.32 |
| 700.51 | 30.06 | 1.00 | 110 | 9.31 | 39.37 | 46.00 | -6.63 |
| 801.15 | 28.98 | 1.00 | 137 | 12.03 | 41.01 | 46.00 | -4.99 |
| 901.79 | 26.74 | 1.00 | 189 | 14.79 | 41.53 | 46.00 | -4.47 |

Test mode: IEEE 802.11b CH06 for 30MHz to 1GHz [Vertical]

| Radiated Emission | | | | Correction Factors | Corrected Amplitude | Class B (3 m) | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| Frequency (MHz) | Amplitude (dBμV) | Ant. H. (m) | Table () | | | Limit (dBμV/m) | Margin (dB) |
| 38.95 | 26.33 | 1.00 | 275 | 5.70 | 32.03 | 40.00 | -7.97 |
| 101.54 | 37.59 | 1.00 | 190 | -1.01 | 36.58 | 43.50 | -6.92 |
| 403.45 | 37.34 | 1.00 | 98 | -1.06 | 36.28 | 46.00 | -9.72 |
| 625.34 | 34.17 | 1.00 | 128 | 7.18 | 41.35 | 46.00 | -4.65 |
| 700.51 | 29.11 | 1.00 | 149 | 9.31 | 38.42 | 46.00 | -7.58 |
| 901.79 | 26.23 | 1.00 | 256 | 14.79 | 41.02 | 46.00 | -4.98 |

Test mode: IEEE 802.11b CH06 for 1GHz to 25GHz [Horizontal]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|----------------|---------------|--------------------|-----|--------------------------|----------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1681.25 | 1.00 | 205 | 35.67 | --- | 13.06 | 48.73 | --- | 73.96 | 53.96 | -5.23 |
| 2354.17 | 1.00 | 174 | 37.67 | --- | 9.08 | 46.75 | --- | 73.96 | 53.96 | -7.21 |
| 7312.29 | 1.00 | 198 | 35.44 | --- | 10.30 | 45.74 | --- | 73.96 | 53.96 | -8.22 |
| 9747.08 | 1.00 | 236 | 35.60 | --- | 11.89 | 47.49 | --- | 73.96 | 53.96 | -6.47 |
| 12187.92 | 1.00 | 298 | 38.94 | --- | 9.74 | 48.68 | --- | 73.96 | 53.96 | -5.28 |

Test mode: IEEE 802.11b CH06 for 1GHz to 25GHz [Vertical]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|----------------|---------------|--------------------|-----|--------------------------|----------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1600.00 | 1.00 | 304 | 36.33 | --- | 14.33 | 50.66 | --- | 73.96 | 53.96 | -3.30 |
| 2197.92 | 1.00 | 304 | 38.34 | --- | 8.64 | 46.98 | --- | 73.96 | 53.96 | -6.98 |
| 2279.17 | 1.00 | 181 | 41.83 | --- | 8.87 | 50.70 | --- | 73.96 | 53.96 | -3.26 |
| 2529.17 | 1.00 | 152 | 40.84 | --- | 9.54 | 50.38 | --- | 73.96 | 53.96 | -3.58 |
| 12187.92 | 1.00 | 55 | 40.60 | --- | 9.74 | 50.34 | --- | 73.96 | 53.96 | -3.62 |
| 21934.79 | 1.00 | 192 | 45.33 | --- | 3.09 | 48.42 | --- | 73.96 | 53.96 | -5.54 |

Test mode: IEEE 802.11b CH11 for 30MHz to 1GHz [Horizontal]

| Radiated Emission | | | | Correction Factors | Corrected Amplitude | Class B (3 m) | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| Frequency (MHz) | Amplitude (dBμV) | Ant. H. (m) | Table () | | | Limit (dBμV/m) | Margin (dB) |
| 253.10 | 42.29 | 1.00 | 47 | -3.75 | 38.54 | 46.00 | -7.46 |
| 403.45 | 39.62 | 1.00 | 199 | -1.06 | 38.56 | 46.00 | -7.44 |
| 504.09 | 40.35 | 1.00 | 165 | 2.47 | 42.82 | 46.00 | -3.18 |
| 601.09 | 29.81 | 1.00 | 123 | 6.30 | 36.11 | 46.00 | -9.89 |
| 700.51 | 28.83 | 1.00 | 103 | 9.31 | 38.14 | 46.00 | -7.86 |
| 900.58 | 27.49 | 1.00 | 189 | 14.76 | 42.25 | 46.00 | -3.75 |

Test mode: IEEE 802.11b CH11 for 30MHz to 1GHz [Vertical]

| Radiated Emission | | | | Correction Factors | Corrected Amplitude | Class B (3 m) | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| Frequency (MHz) | Amplitude (dBμV) | Ant. H. (m) | Table () | | | Limit (dBμV/m) | Margin (dB) |
| 66.98 | 35.24 | 1.00 | 132 | 1.54 | 36.78 | 40.00 | -3.22 |
| 100.93 | 36.80 | 1.00 | 196 | -0.94 | 35.86 | 43.50 | -7.64 |
| 625.94 | 33.71 | 1.00 | 136 | 7.20 | 40.91 | 46.00 | -5.09 |
| 701.12 | 30.52 | 1.00 | 165 | 9.32 | 39.84 | 46.00 | -6.16 |
| 766.59 | 26.97 | 1.00 | 125 | 10.78 | 37.75 | 46.00 | -8.25 |
| 900.58 | 26.10 | 1.00 | 261 | 14.76 | 40.86 | 46.00 | -5.14 |

Test mode: IEEE 802.11b CH11 for 1GHz to 25GHz [Horizontal]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|--------------------|---------------|--------------------|-----|------------------------------|--------------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1641.67 | 1.00 | 26 | 34.83 | --- | 13.68 | 48.51 | --- | 73.96 | 53.96 | -5.45 |
| 1995.83 | 1.00 | 241 | 39.00 | --- | 8.16 | 47.16 | --- | 73.96 | 53.96 | -6.80 |
| 2343.75 | 1.00 | 141 | 36.17 | --- | 9.05 | 45.22 | --- | 73.96 | 53.96 | -8.74 |
| 7384.79 | 1.00 | 20 | 35.61 | --- | 10.42 | 46.03 | --- | 73.96 | 53.96 | -7.93 |
| 9849.79 | 1.00 | 296 | 35.11 | --- | 11.93 | 47.04 | --- | 73.96 | 53.96 | -6.92 |
| 12308.75 | 1.00 | 303 | 37.61 | --- | 9.56 | 47.17 | --- | 73.96 | 53.96 | -6.79 |

Test mode: IEEE 802.11b CH11 for 1GHz to 25GHz [Vertical]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|--------------------|---------------|--------------------|-----|------------------------------|--------------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1700.00 | 1.00 | 327 | 37.17 | --- | 12.77 | 49.94 | --- | 73.96 | 53.96 | -4.02 |
| 2241.67 | 1.00 | 286 | 41.50 | --- | 8.77 | 50.27 | --- | 73.96 | 53.96 | -3.69 |
| 2512.50 | 1.00 | 160 | 41.17 | --- | 9.51 | 50.68 | --- | 73.96 | 53.96 | -3.28 |
| 9849.79 | 1.00 | 245 | 34.94 | --- | 11.93 | 46.87 | --- | 73.96 | 53.96 | -7.09 |
| 12308.75 | 1.00 | 251 | 36.94 | --- | 9.56 | 46.50 | --- | 73.96 | 53.96 | -7.46 |

Test mode: IEEE 802.11g CH01 for 30MHz to 1GHz [Horizontal]

| Radiated Emission | | | | Correction Factors | Corrected Amplitude | Class B (3 m) | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| Frequency (MHz) | Amplitude (dBμV) | Ant. H. (m) | Table () | | | Limit (dBμV/m) | Margin (dB) |
| 302.81 | 42.54 | 1.00 | 0 | -3.30 | 39.24 | 46.00 | -6.76 |
| 403.45 | 40.10 | 1.00 | 193 | -1.06 | 39.04 | 46.00 | -6.96 |
| 500.00 | 39.90 | 1.00 | 160 | 2.28 | 42.18 | 46.00 | -3.82 |
| 601.09 | 32.89 | 1.00 | 171 | 6.30 | 39.19 | 46.00 | -6.81 |
| 700.51 | 32.82 | 1.00 | 151 | 9.31 | 42.13 | 46.00 | -3.87 |
| 901.79 | 25.71 | 1.00 | 189 | 14.79 | 40.50 | 46.00 | -5.50 |

Test mode: IEEE 802.11g CH01 for 30MHz to 1GHz [Vertical]

| Radiated Emission | | | | Correction Factors | Corrected Amplitude | Class B (3 m) | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| Frequency (MHz) | Amplitude (dBμV) | Ant. H. (m) | Table () | | | Limit (dBμV/m) | Margin (dB) |
| 34.85 | 29.75 | 1.00 | 13 | 6.43 | 36.18 | 40.00 | -3.82 |
| 101.54 | 37.38 | 1.00 | 323 | -1.01 | 36.37 | 43.50 | -7.13 |
| 625.34 | 33.38 | 1.00 | 128 | 7.18 | 40.56 | 46.00 | -5.44 |
| 700.51 | 29.07 | 1.00 | 31 | 9.31 | 38.38 | 46.00 | -7.62 |
| 767.20 | 27.34 | 1.00 | 128 | 10.81 | 38.15 | 46.00 | -7.85 |
| 901.79 | 26.62 | 1.00 | 249 | 14.79 | 41.41 | 46.00 | -4.59 |

Test mode: IEEE 802.11g CH01 for 1GHz to 25GHz [Horizontal]

| Frequency | Ant. H. | Table | Amplitude | | Correction Factor | Corrected Amplitude | | Limit | | Margin |
|-----------|------------|--------|-------------|-----|----------------------|------------------------|-----|-------------|-------|--------|
| | | | Peak / Ave. | | | Peak / Ave. | | Peak / Ave. | | |
| MHz | m | degree | dBμV | | dB/m | dBμV/m | | dBμV/m | | dB |
| 1608.33 | 1.00 | 272 | 35.00 | --- | 14.20 | 49.20 | --- | 73.96 | 53.96 | -4.76 |
| 2127.08 | 1.00 | 275 | 36.50 | --- | 8.45 | 44.95 | --- | 73.96 | 53.96 | -9.01 |
| 7233.75 | 1.00 | 136 | 35.61 | --- | 10.07 | 45.68 | --- | 73.96 | 53.96 | -8.28 |
| 9650.42 | 1.00 | 154 | 35.27 | --- | 11.47 | 46.74 | --- | 73.96 | 53.96 | -7.22 |
| 12061.04 | 1.00 | 79 | 38.27 | --- | 9.81 | 48.08 | --- | 73.96 | 53.96 | -5.88 |

Test mode: IEEE 802.11g CH01 for 1GHz to 25GHz [Vertical]

| Frequency | Ant. H. | Table | Amplitude | | Correction Factor | Corrected Amplitude | | Limit | | Margin |
|-----------|------------|--------|-------------|-----|----------------------|------------------------|-----|-------------|-------|--------|
| | | | Peak / Ave. | | | Peak / Ave. | | Peak / Ave. | | |
| MHz | m | degree | dBμV | | dB/m | dBμV/m | | dBμV/m | | dB |
| 1600.00 | 1.00 | 333 | 35.83 | --- | 14.33 | 50.16 | --- | 73.96 | 53.96 | -3.80 |
| 1991.67 | 1.00 | 349 | 37.17 | --- | 8.22 | 45.39 | --- | 73.96 | 53.96 | -8.57 |
| 2262.50 | 1.00 | 181 | 40.50 | --- | 8.82 | 49.32 | --- | 73.96 | 53.96 | -4.64 |
| 9650.42 | 1.00 | 7 | 36.27 | --- | 11.47 | 47.74 | --- | 73.96 | 53.96 | -6.22 |
| 12061.04 | 1.00 | 284 | 38.60 | --- | 9.81 | 48.41 | --- | 73.96 | 53.96 | -5.55 |

Test mode: IEEE 802.11g CH06 for 30MHz to 1GHz [Horizontal]

| <i>Radiated Emission</i> | | | | <i>Correction Factors</i> | <i>Corrected Amplitude</i> | <i>Class B (3 m)</i> | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| <i>Frequency (MHz)</i> | <i>Amplitude (dBμV)</i> | <i>Ant. H. (m)</i> | <i>Table ()</i> | | | <i>Limit (dBμV/m)</i> | <i>Margin (dB)</i> |
| 185.20 | 39.34 | 1.00 | 7 | -3.74 | 35.60 | 43.50 | -7.90 |
| 251.89 | 43.12 | 1.00 | 47 | -3.66 | 39.46 | 46.00 | -6.54 |
| 403.45 | 39.38 | 1.00 | 193 | -1.06 | 38.32 | 46.00 | -7.68 |
| 500.00 | 39.90 | 1.00 | 183 | 2.28 | 42.18 | 46.00 | -3.82 |
| 833.89 | 25.53 | 1.00 | 135 | 12.74 | 38.27 | 46.00 | -7.73 |
| 900.58 | 26.48 | 1.00 | 194 | 14.76 | 41.24 | 46.00 | -4.76 |

Test mode: IEEE 802.11g CH06 for 30MHz to 1GHz [Vertical]

| <i>Radiated Emission</i> | | | | <i>Correction Factors</i> | <i>Corrected Amplitude</i> | <i>Class B (3 m)</i> | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| <i>Frequency (MHz)</i> | <i>Amplitude (dBμV)</i> | <i>Ant. H. (m)</i> | <i>Table ()</i> | | | <i>Limit (dBμV/m)</i> | <i>Margin (dB)</i> |
| 33.64 | 29.99 | 1.00 | 316 | 6.88 | 36.87 | 40.00 | -3.13 |
| 66.37 | 33.52 | 1.00 | 135 | 1.59 | 35.11 | 40.00 | -4.89 |
| 101.54 | 36.91 | 1.00 | 148 | -1.01 | 35.90 | 43.50 | -7.60 |
| 625.34 | 33.73 | 1.00 | 137 | 7.18 | 40.91 | 46.00 | -5.09 |
| 700.51 | 30.79 | 1.00 | 144 | 9.31 | 40.10 | 46.00 | -5.90 |
| 901.79 | 27.06 | 1.00 | 264 | 14.79 | 41.85 | 46.00 | -4.15 |

Test mode: IEEE 802.11g CH06 for 1GHz to 25GHz [Horizontal]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|----------------|---------------|--------------------|-----|--------------------------|----------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1625.00 | 1.00 | 353 | 35.50 | --- | 13.94 | 49.44 | --- | 73.96 | 53.96 | -4.52 |
| 2200.00 | 1.00 | 268 | 36.33 | --- | 8.65 | 44.98 | --- | 73.96 | 53.96 | -8.98 |
| 7312.29 | 1.00 | 78 | 35.94 | --- | 10.30 | 46.24 | --- | 73.96 | 53.96 | -7.72 |
| 9747.08 | 1.00 | 107 | 36.10 | --- | 11.89 | 47.99 | --- | 73.96 | 53.96 | -5.97 |
| 12187.92 | 1.00 | 251 | 39.60 | --- | 9.74 | 49.34 | --- | 73.96 | 53.96 | -4.62 |

Test mode: IEEE 802.11g CH06 for 1GHz to 25GHz [Vertical]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|----------------|---------------|--------------------|-----|--------------------------|----------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1625.00 | 1.00 | 292 | 36.33 | --- | 13.94 | 50.27 | --- | 73.96 | 53.96 | -3.69 |
| 2279.17 | 1.00 | 172 | 37.17 | --- | 8.87 | 46.04 | --- | 73.96 | 53.96 | -7.92 |
| 2529.17 | 1.00 | 11 | 39.50 | --- | 9.54 | 49.04 | --- | 73.96 | 53.96 | -4.92 |
| 9747.08 | 1.00 | 179 | 35.94 | --- | 11.89 | 47.83 | --- | 73.96 | 53.96 | -6.13 |
| 12187.92 | 1.00 | 359 | 39.77 | --- | 9.74 | 49.51 | --- | 73.96 | 53.96 | -4.45 |

Test mode: IEEE 802.11g CH11 for 30MHz to 1GHz [Horizontal]

| Radiated Emission | | | | Correction Factors | Corrected Amplitude | Class B (3 m) | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| Frequency (MHz) | Amplitude (dBμV) | Ant. H. (m) | Table () | | | Limit (dBμV/m) | Margin (dB) |
| 253.10 | 42.29 | 1.00 | 47 | -3.75 | 38.54 | 46.00 | -7.46 |
| 403.45 | 39.52 | 1.00 | 188 | -1.06 | 38.46 | 46.00 | -7.54 |
| 504.09 | 40.16 | 1.00 | 151 | 2.47 | 42.63 | 46.00 | -3.37 |
| 700.51 | 29.32 | 1.00 | 151 | 9.31 | 38.63 | 46.00 | -7.37 |
| 801.15 | 27.42 | 1.00 | 48 | 12.03 | 39.45 | 46.00 | -6.55 |
| 900.58 | 27.15 | 1.00 | 195 | 14.76 | 41.91 | 46.00 | -4.09 |

Test mode: IEEE 802.11g CH11 for 30MHz to 1GHz [Vertical]

| Radiated Emission | | | | Correction Factors | Corrected Amplitude | Class B (3 m) | |
|--------------------------|-------------------------|--------------------|------------------|---------------------------|----------------------------|-----------------------|--------------------|
| Frequency (MHz) | Amplitude (dBμV) | Ant. H. (m) | Table () | | | Limit (dBμV/m) | Margin (dB) |
| 60.31 | 34.61 | 1.00 | 114 | 2.06 | 36.67 | 40.00 | -3.33 |
| 100.93 | 38.07 | 1.00 | 225 | -0.94 | 37.13 | 43.50 | -6.37 |
| 600.48 | 35.72 | 1.00 | 84 | 6.28 | 42.00 | 46.00 | -4.00 |
| 700.51 | 30.22 | 1.00 | 147 | 9.31 | 39.53 | 46.00 | -6.47 |
| 800.54 | 25.63 | 1.00 | 66 | 12.01 | 37.64 | 46.00 | -8.36 |
| 900.58 | 27.03 | 1.00 | 264 | 14.76 | 41.79 | 46.00 | -4.21 |

Test mode: IEEE 802.11g CH11 for 1GHz to 25GHz [Horizontal]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|--------------------|---------------|--------------------|-----|------------------------------|--------------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1641.67 | 1.00 | 265 | 36.33 | --- | 13.68 | 50.01 | --- | 73.96 | 53.96 | -3.95 |
| 1995.83 | 1.00 | 222 | 37.50 | --- | 8.16 | 45.66 | --- | 73.96 | 53.96 | -8.30 |
| 2389.58 | 1.00 | 212 | 36.17 | --- | 9.18 | 45.35 | --- | 73.96 | 53.96 | -8.61 |
| 9849.79 | 1.00 | 298 | 35.78 | --- | 11.93 | 47.71 | --- | 73.96 | 53.96 | -6.25 |
| 12308.75 | 1.00 | 0 | 37.27 | --- | 9.56 | 46.83 | --- | 73.96 | 53.96 | -7.13 |

Test mode: IEEE 802.11g CH11 for 1GHz to 25GHz [Vertical]

| <i>Frequency</i> | <i>Ant. H.</i> | <i>Table</i> | <i>Amplitude</i> | | <i>Correction Factor</i> | <i>Corrected Amplitude</i> | | <i>Limit</i> | | <i>Margin</i> |
|------------------|--------------------|---------------|--------------------|-----|------------------------------|--------------------------------|-----|--------------------|-------|---------------|
| | | | <i>Peak / Ave.</i> | | | <i>Peak / Ave.</i> | | <i>Peak / Ave.</i> | | |
| <i>MHz</i> | <i>m</i> | <i>degree</i> | <i>dBμV</i> | | <i>dB/m</i> | <i>dBμV/m</i> | | <i>dBμV/m</i> | | <i>dB</i> |
| 1641.67 | 1.00 | 297 | 36.00 | --- | 13.68 | 49.68 | --- | 73.96 | 53.96 | -4.28 |
| 2318.75 | 1.00 | 179 | 41.67 | --- | 8.98 | 50.65 | --- | 73.96 | 53.96 | -3.31 |
| 2389.58 | 1.00 | 179 | 39.17 | --- | 9.18 | 48.35 | --- | 73.96 | 53.96 | -5.61 |
| 7384.79 | 1.00 | 103 | 35.44 | --- | 10.42 | 45.86 | --- | 73.96 | 53.96 | -8.10 |
| 9849.79 | 1.00 | 325 | 36.61 | --- | 11.93 | 48.54 | --- | 73.96 | 53.96 | -5.42 |