# A Test Lab Techno Corp.

No.140-1, Chang-an St., Bade City, Tao-Yuan County 334, Taiwan (R.O.C.)
Tel：+886-3-2710188 / Fax：+886-3-2710190

## Part 15 C Measurement Report

| | | |
|---|---|---|
| **Report No.** | ： | **0909FR11** |
| **Applicant** | ： | **BaudTec Corporation** |
| **Product Name** | ： | **Wireless 802.11b/g ADSL2+ Router** |
| **Trade Name** | ： | **BaudTec** |
| **Model No.** | ： | **TW263R4** |
| **FCC ID** | ： | **XKR-TW263R4** |
| **Dates of Test** | ： | **Sep. 04 ~ Sep. 07, 2009** |
| **Test Specification** | ： | **FCC CFR Title 47 Part 15 Subpart C (15.247) (2008-10)**<br>**PUBLIC NOTICE :DA 00-705 Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems** |
| **Location of Test Lab.** | ： | **Chang-an Lab.** |

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full. This report shall not be reproduced except in full, without the written approval of A Test Lab Techno Corp.
4. This document may be altered or revised by A Test Lab Techno. Corp. personnel only, and shall be noted in the revision section of the document.

**Miller Lee** **20090914**
**Approve Signer**

**John Cheng** **20090914**
**Testing Engineer**

# CERTIFICATION

**We hereby verify that:**

**The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2003. All test were conducted by *A Test Lab Techno Corp. No.140-1, Chang-an St., Bade City, Tao-Yuan County 334, 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 Class B radiated and conducted emission limit of FCC Rules Part 15 Subpart C (15.247).**

| | | |
|---|---|---|
| **Product Name** | : | **Wireless 802.11b/g ADSL2+ Router** |
| **Applicant** | : | **BaudTec Corporation** |
| **Applicant Address** | : | **12F, No.181, Sec. 1, Tatung Rd., Hsichih City,Taipei Hsien 221, Taiwan, R.O.C.** |
| **Manufacturer** | : | **BaudTec Corporation** |
| **Manufacturer Address** | : | **12F, No.181, Sec. 1, Tatung Rd., Hsichih City,Taipei Hsien 221, Taiwan, R.O.C.** |
| **Trade Name** | : | **BaudTec** |
| **Model No.** | : | **TW263R4** |
| **FCC ID** | : | **XKR-TW263R4** |
| **Rated Voltage** | : | **100-240Vac, 0.5A, 50/60Hz** |
| **EUT Voltage** | : | **12Vdc, 1A** |
| **Applicable Standard** | : | **FCC CFR Title 47 Part 15 Subpart C (15.247) (2008-10)** |
| **Classification** | : | **B** |
| **Test Result** | : | **Complied** |

***Approved by :*** Miller Lee **Miller Lee 2009/09/14**

***Prepared by :*** John Cheng **John Cheng 2009/09/14**


## A Test Lab Techno Corp.

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Tel：03-2710188 / Fax：03-2710190

# Contents

# 1. GENERAL

## 1.1 Description of Equipment under Test (EUT)

| | | |
|---|---|---|
| **Applicant** | : | BaudTec Corporation |
| **Applicant Address** | : | 12F, NO, 181, Sec.1.TatungRd., His-chih City, Taipei county, Taiwan 221 |
| **Manufacturer** | : | BaudTec Corporation |
| **Manufacturer Address** | : | 12F, NO, 181, Sec.1.TatungRd., His-chih City, Taipei county, Taiwan 221 |
| **Product Name** | : | Wireless 802.11b/g ADSL2+ Router |
| **Trade Name** | : | BaudTec |
| **Model No.** | : | TW263R4 |
| **Frequency Range** | : | IEEE 802.11b / IEEE 802.11g: 2412MHz~2462MHz |
| **Type of Modulation** | : | IEEE 802.11b:DSSS(CCK, DQPSK, DBPSK)<br>IEEE 802.11g:DSSS(CCK, DQPSK, DBPSK)+ OFDM(QPSK, BPSK, 16-QAM, 64-QAM) |
| **Hardware Version** | : | 7000-06I7-00 |
| **Software Version** | : | STD(P2F_85)_A07(211650_310250) |
| **Component** | | |
| **Power Adapter (1)** | : | ADS10-W 120100<br>Input:100-240Vac, 0.5A, 50/60Hz<br>Output: 12Vdc, 1A<br>Cable out: Non-Shielded, 1.5 m |

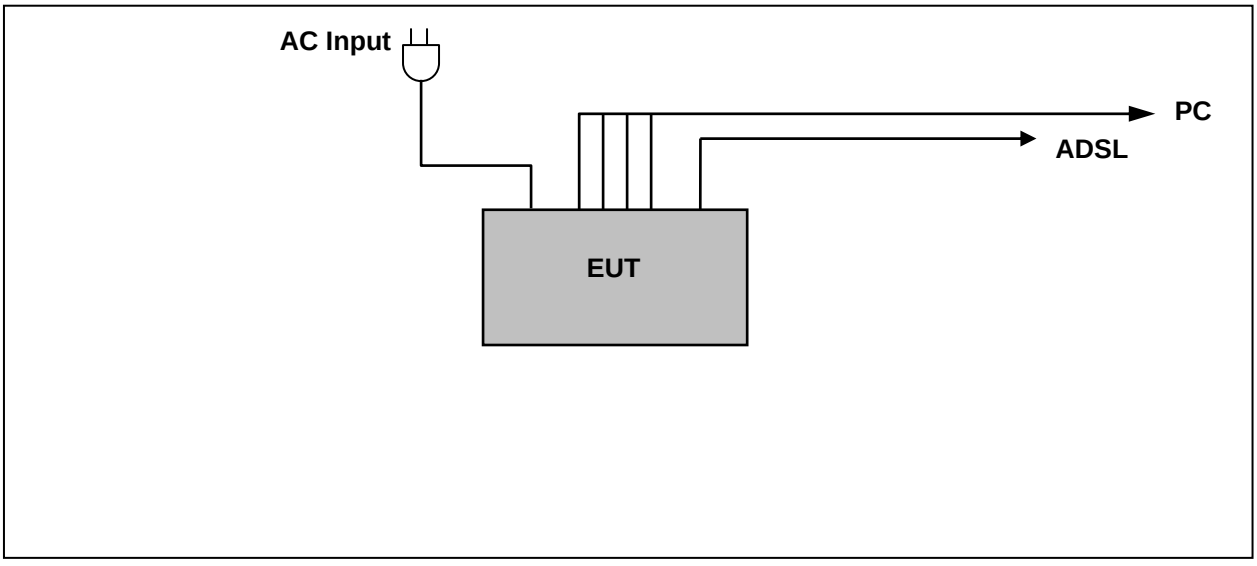
## 1.2 Introduction

The following measurement report is submitted on behalf of **BaudTec Corporation** In support of a Class B Digital Device certification in accordance with Part2 Subpart J and Part 15 Subpart A and B&C of the Commission's and Regulations.

## 1.3 Summary of Tests

| 47 CFR Part 15 Subpart C | | | |
|---|---|---|---|
| **Reference** | **Test** | **Results** | **Note** |
| 15.207 | AC Power Conducted Emission | PASS | ----- |
| 15.247(c) | Transmitter Radiated Emissions | PASS | ----- |
| 15.247(b) | Max. Output Power | PASS | ----- |
| 15.247(a)(2) | 6dB RF Bandwidth | PASS | ----- |
| 15.247(d) | Max. Power Density | PASS | ----- |
| 15.247(c) | Out of Band Conducted Spurious Emission | PASS | ----- |
| 15.247(c) | Band Edge Measurement | PASS | ----- |
| 15.203 | Antenna Requirement | PASS | ----- |

## 1.4 Configuration of System under Test




During testing the EUT's LAN port connected to the PC and ADSL port connect ADSL.

# 2. Conducted Emissions Requirements

## 2.1 Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm//50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

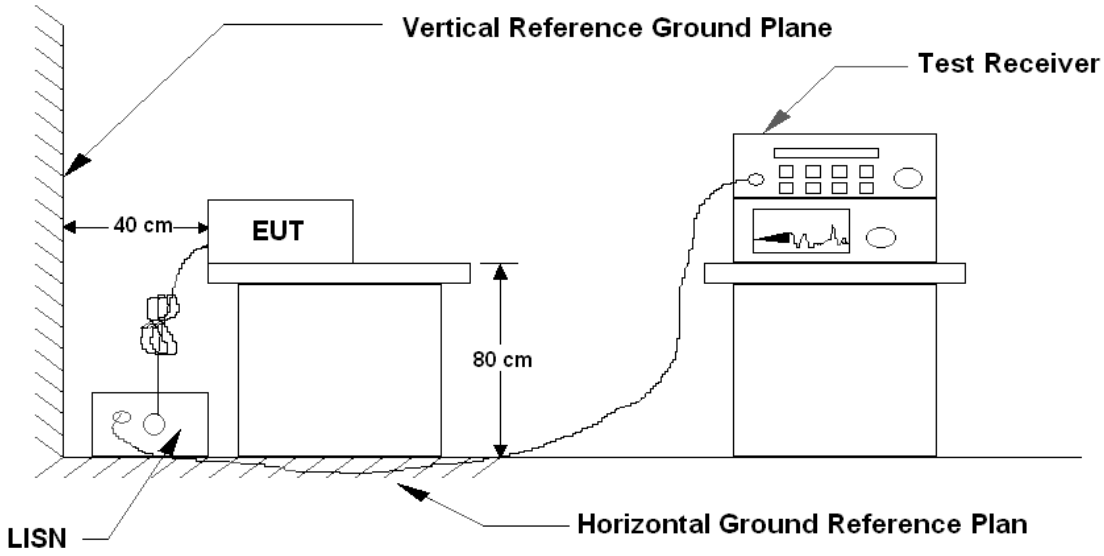
## 2.2 Limits

| Frequency range (MHz) | Limits (dBuV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 to 0.50 | 66 to 56 | 56 to 46 |
| 0.50 to 5.0 | 56 | 46 |
| 5.0 to 30 | 60 | 50 |

## 2.3 Test Equipment List

| Describe | Manufacturer | Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Cal. Date | Due Date |
| Spectrum Analyzer | Advantest | R3132 | 160300103 | Mar. 10, 2009 | Mar. 10, 2010 |
| Test Receiver | R&S | ESCI | 100367 | Jun. 05, 2009 | Jun. 05, 2010 |
| LISN | EMCO | 3816/2 SH | 00060110 | Jun. 05, 2009 | Jun. 05, 2010 |
| LISN | EMCO | 3816/2 SH | 00060111 | Jun. 29, 2009 | Jun. 29, 2010 |
| Transient Limiter | ELECTRO-METRICS | EM-7600 | 777 | Sep. 22, 2008 | Sep. 22, 2009 |

## 2.4 Test Instruments Configuration




## 2.5 Test Results

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : Link Mode

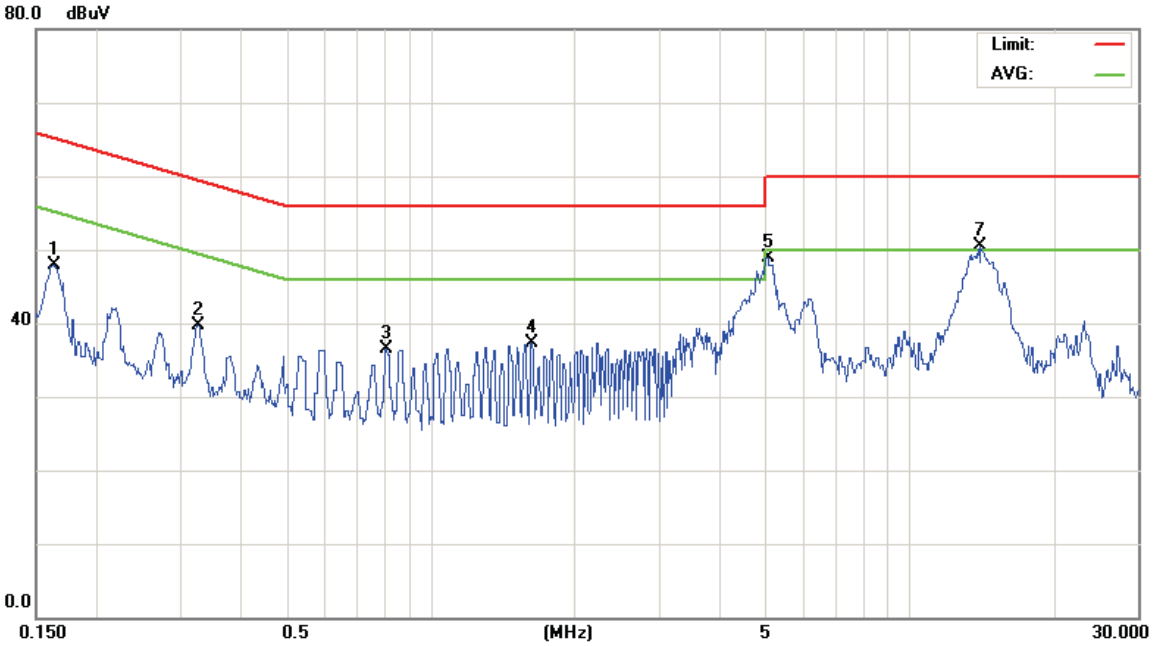
Test Date : 08/28/2009

Please refer to next page of detail testing data.

Notes:

1. L1: One end & Ground L2: The other end & Ground
2. Height of table on which the EUT was placed: 0.8 m.
3. The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
4. The above test results are obtained under the normal condition.

File :FCC Data :#1 Date: 2009/8/28 Time: 上午 12:45:19




Site site#1 Phase: *L1* Temperature: 26 ℃

Limit: CISPR22 Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %

EUT:

M/N: 09-0216-EP

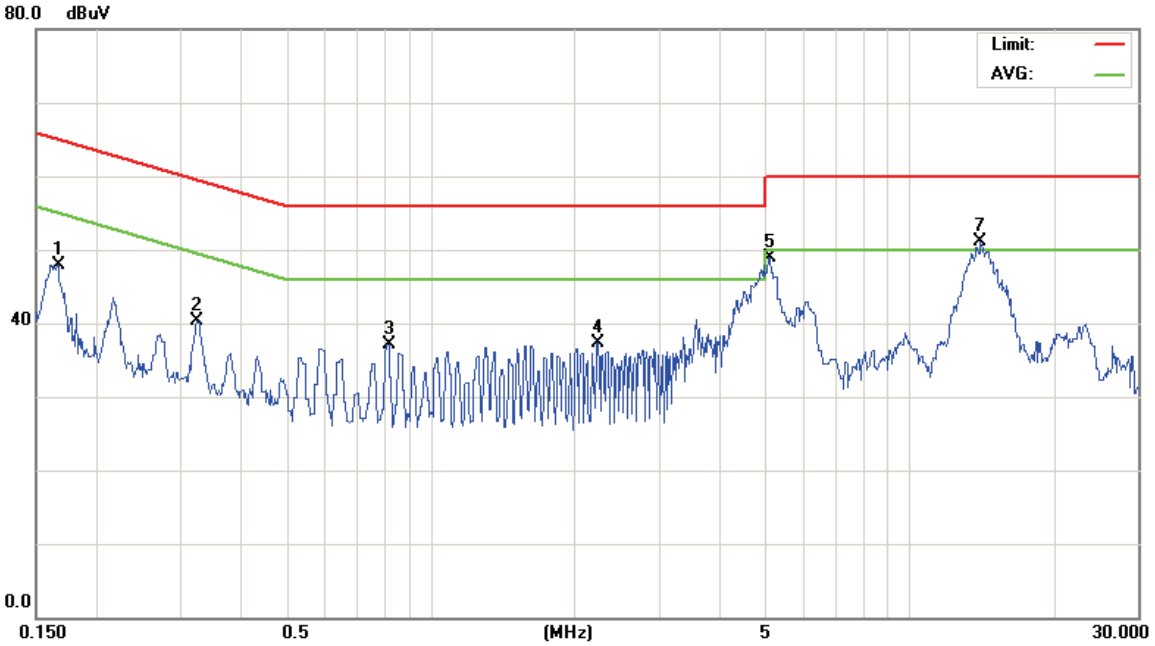
Mode: Link Mode

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1626 | 38.16 | 9.73 | 47.89 | 65.32 | -17.43 | peak | |
| 2 | | 0.3257 | 30.02 | 9.77 | 39.79 | 59.56 | -19.77 | peak | |
| 3 | | 0.8059 | 26.61 | 9.80 | 36.41 | 56.00 | -19.59 | peak | |
| 4 | | 1.6250 | 27.43 | 9.83 | 37.26 | 56.00 | -18.74 | peak | |
| 5 | | 5.0500 | 38.77 | 10.08 | 48.85 | 60.00 | -11.15 | peak | |
| 6 | | 5.0500 | 20.32 | 10.08 | 30.40 | 50.00 | -19.60 | AVG | |
| 7 | * | 14.0500 | 40.40 | 10.20 | 50.60 | 60.00 | -9.40 | peak | |
| 8 | | 14.0500 | 23.70 | 10.20 | 33.90 | 50.00 | -16.10 | AVG | |

*:Maximum data x:Over limit !:over margin ●Reference Only

File :FCC Data :#2 Date: 2009/8/28 Time: 上午 12:51:43




Site site#1 Phase: *L2* Temperature: 26 ℃

Limit: CISPR22 Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %

EUT:

M/N: 09-0216-EP

Mode: Link Mode

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1661 | 38.18 | 9.73 | 47.91 | 65.15 | -17.24 | peak | |
| 2 | | 0.3243 | 30.46 | 9.77 | 40.23 | 59.59 | -19.36 | peak | |
| 3 | | 0.8150 | 27.27 | 9.80 | 37.07 | 56.00 | -18.93 | peak | |
| 4 | | 2.2280 | 27.35 | 9.88 | 37.23 | 56.00 | -18.77 | peak | |
| 5 | | 5.1000 | 38.78 | 10.08 | 48.86 | 60.00 | -11.14 | peak | |
| 6 | | 5.1000 | 24.72 | 10.08 | 34.80 | 50.00 | -15.20 | AVG | |
| 7 | * | 14.0500 | 40.91 | 10.20 | 51.11 | 60.00 | -8.89 | peak | |
| 8 | | 14.0500 | 24.70 | 10.20 | 34.90 | 50.00 | -15.10 | AVG | |

*:Maximum data x:Over limit !:over margin ●Reference Only

# 3. Radiated Emissions Requirements

## 3.1 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

The EUT was positioned such that the distance from antenna to the EUT was 10 meters for the frequency under 1GHz and 3 meters for the frequency above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30) is 120 kHz and above 1GHz is 1MHz.

## 3.2 Radiated Emissions Limits

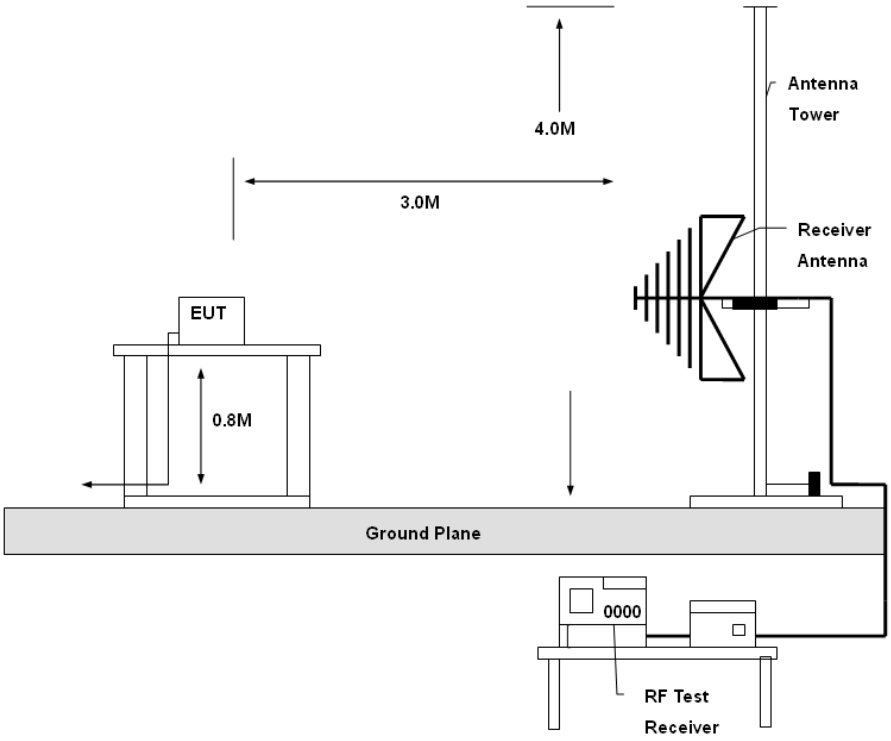
| Frequency range (MHz) | Field strength (microvolts/meter) | Measure-ment dis-tance (meters) |
|---|---|---|
| 0.009 to 0.490 | 2400/F(kHz) | 300 |
| 0.490 to 1.705 | 24000/F(kHz) | 30 |
| 1.705 to 30.0 | 30 | 30 |
| 30 to 88 | 100** | 3 |
| 88 to 216 | 150** | 3 |
| 216 to 960 | 200** | 3 |
| Above 960 | 500** | 3 |

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76– 88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

## 3.3 Test Equipment List

| Describe | Manufacturer | Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Cal. Date | Due Date |
| Spectrum Analyzer | Agilent | E4408B | MY46181421 | Mar. 13, 2009 | Mar. 13, 2010 |
| Pre Amplifier | Agilent | 8449B | 3008A02457 | Mar. 04, 2009 | Mar. 04, 2010 |
| Pre Amplifier | Agilent | 8447D | 2944A11119 | Jan. 19, 2009 | Jan. 19, 2010 |
| Test Receiver | R&S | ESCI | 100367 | Jun. 05, 2009 | Jun. 05, 2010 |
| Biconilog Antenna | SCHWARZBECK MESS-ELEKTRONIK | VULB9163 | 9163-270 | Jun. 23, 2009 | Jun. 23, 2010 |
| Horn Antenna | SCHWARZBECK MESS-ELEKTRONIK | BBHA9120D | 9120D-550 | Jul. 01, 2009 | Jul. 01, 2010 |
| Horn Antenna | SCHWARZBECK MESS-ELEKTRONIK | BBHA9170 | 9170-320 | Jun. 30, 2009 | Jun. 30, 2010 |
| Horn Antenna | SCHWARZBECK MESS-ELEKTRONIK | BBHA9120E | 0899 | Jun. 23, 2009 | Jun. 23, 2010 |

## 3.4 Test Instruments Configuration



## 3.5 Test Results

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11b Link Mode

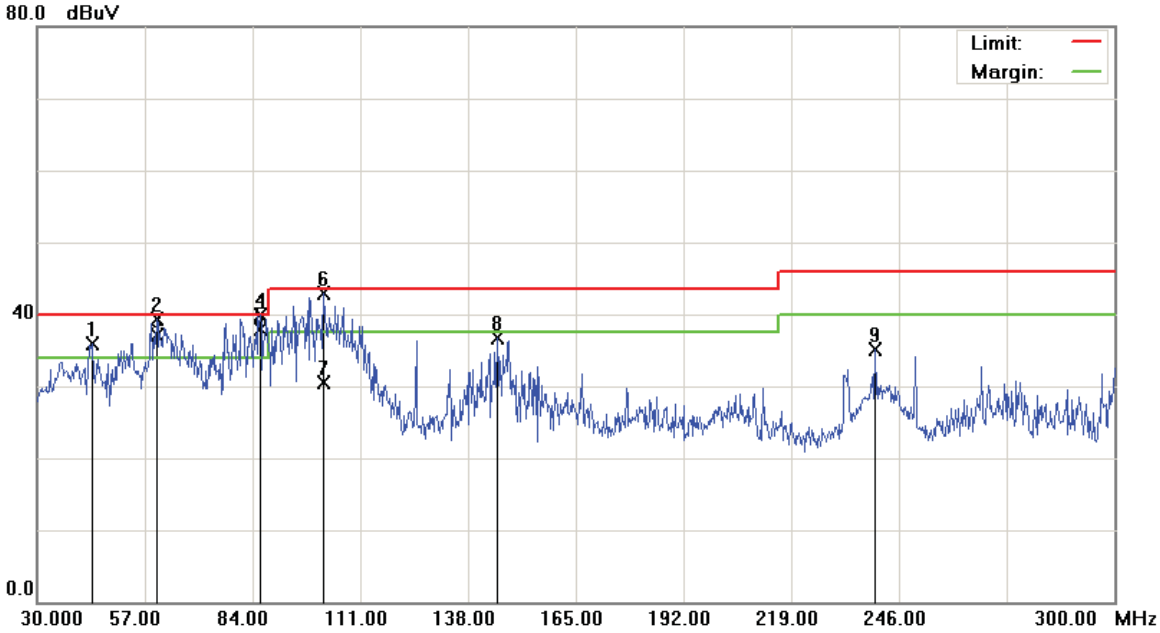
Test Date : 09/04/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Distance of Measurement: 3 Meter (30-1000MHz) & (1-10GHz), 1 Meter (10-26.5GHz)
3. Height of table for EUT placed: 0.8 Meter.
4. ANT= Antenna height.
5. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor
   (Auto calculate in spectrum analyzer)
6. The EUT was worst case on X axis after pretest on X & Y & Z axis setting.
7. The testing data only show below 18GHz's data because measure data above 18GHz was only ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested

File :FCC(WIFI) Data :#5 Date: 2009/9/4 Time: 上午 03:00:54




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note:

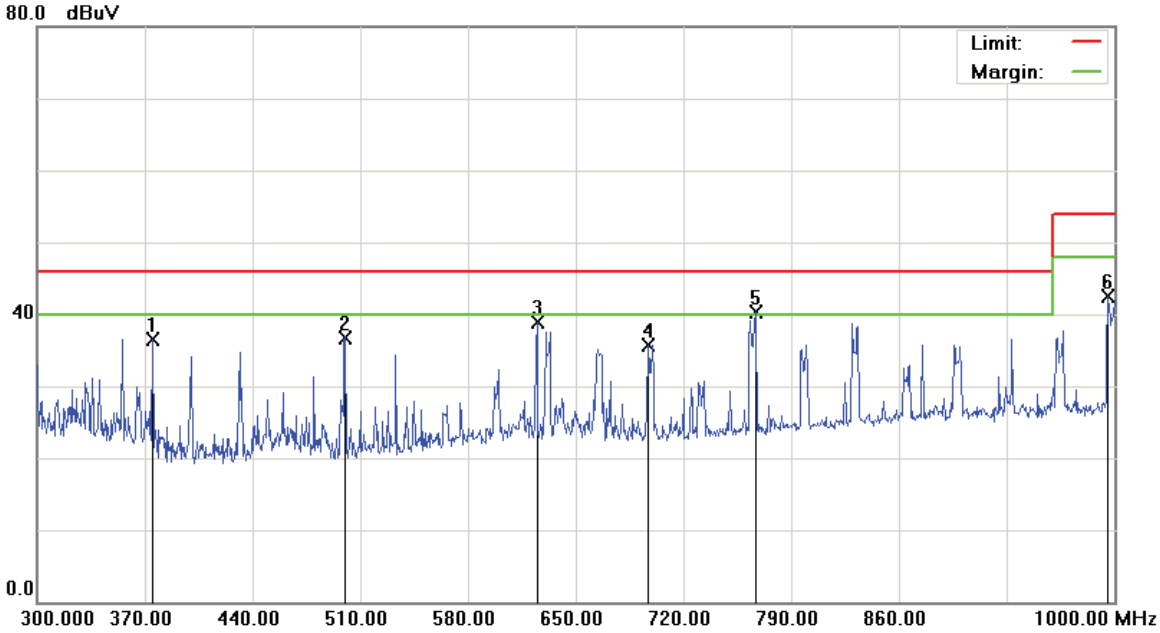
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | ! | 43.7700 | 47.81 | -11.84 | 35.97 | 40.00 | -4.03 | peak | | | |
| 2 | ! | 59.9700 | 51.87 | -12.54 | 39.33 | 40.00 | -0.67 | peak | | | |
| 3 | ! | 59.9700 | 49.60 | -12.54 | 37.06 | 40.00 | -2.94 | QP | | | |
| 4 | * | 85.8900 | 54.31 | -14.46 | 39.85 | 40.00 | -0.15 | peak | | | |
| 5 | ! | 85.8900 | 52.34 | -14.46 | 37.88 | 40.00 | -2.12 | QP | | | |
| 6 | ! | 101.8200 | 54.86 | -11.88 | 42.98 | 43.50 | -0.52 | peak | | | |
| 7 | | 101.8200 | 42.38 | -11.88 | 30.50 | 43.50 | -13.00 | QP | | | |
| 8 | | 145.2900 | 52.81 | -16.17 | 36.64 | 43.50 | -6.86 | peak | | | |
| 9 | | 240.0600 | 46.45 | -11.43 | 35.02 | 46.00 | -10.98 | peak | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(WIFI) Data :#6 Date: 2009/9/4 Time: 上午 03:05:08




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note:

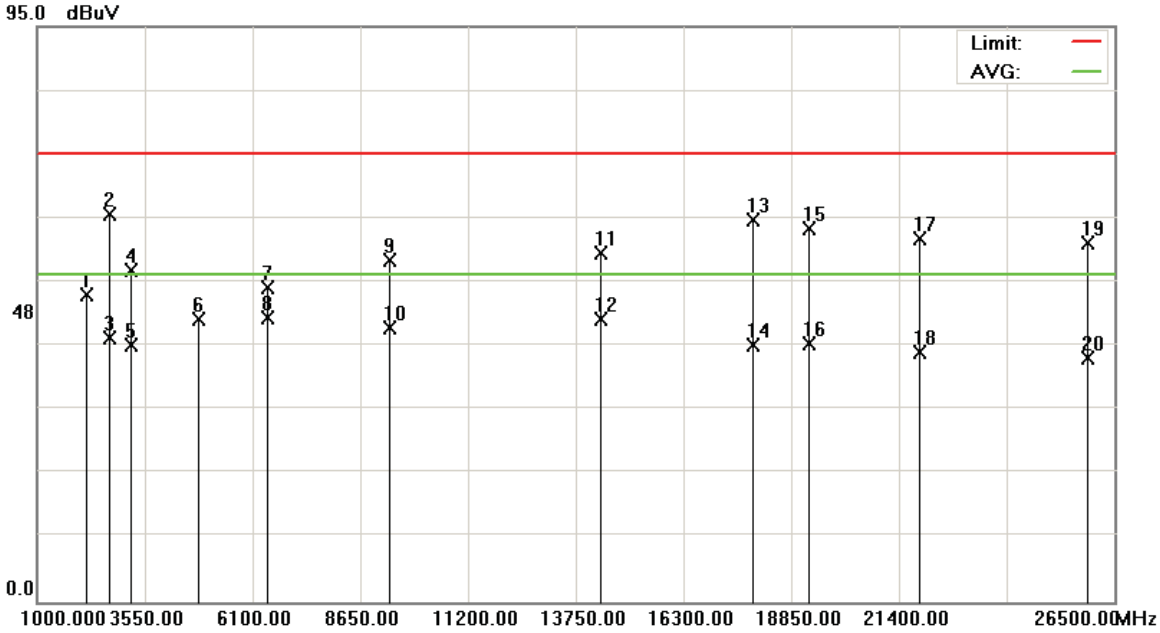
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 374.9000 | 45.54 | -8.95 | 36.59 | 46.00 | -9.41 | peak | | | |
| 2 | | 500.2000 | 43.97 | -7.17 | 36.80 | 46.00 | -9.20 | peak | | | |
| 3 | | 624.8000 | 43.47 | -4.64 | 38.83 | 46.00 | -7.17 | peak | | | |
| 4 | | 696.9000 | 39.52 | -3.85 | 35.67 | 46.00 | -10.33 | peak | | | |
| 5 | * | 766.9000 | 43.00 | -2.75 | 40.25 | 46.00 | -5.75 | peak | | | |
| 6 | | 995.8000 | 41.72 | 0.75 | 42.47 | 54.00 | -11.53 | peak | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2412MHz) Data :#17 Date: 2009/9/4 Time: 上午 01:29:18




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: CH01(2412MHz)

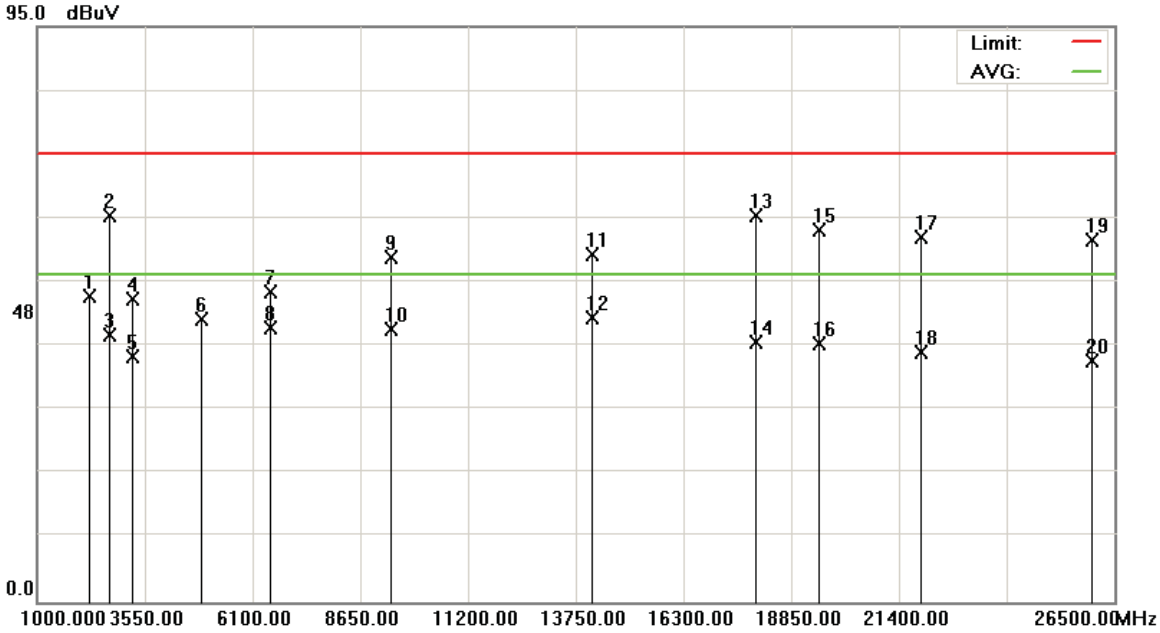
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2149.200 | 50.58 | 0.10 | 50.68 | 74.00 | -23.32 | peak | | | |
| 2 | | 2700.000 | 41.34 | 22.58 | 63.92 | 74.00 | -10.08 | peak | | | |
| 3 | | 2700.000 | 21.12 | 22.58 | 43.70 | 54.00 | -10.30 | AVG | | | |
| 4 | | 3211.000 | 51.84 | 2.85 | 54.69 | 74.00 | -19.31 | peak | | | |
| 5 | | 3211.000 | 39.45 | 2.85 | 42.30 | 54.00 | -11.70 | AVG | | | |
| 6 | | 4824.000 | 39.13 | 7.48 | 46.61 | 74.00 | -27.39 | peak | | | |
| 7 | | 6441.250 | 41.02 | 10.80 | 51.82 | 74.00 | -22.18 | peak | | | |
| 8 | * | 6441.250 | 35.99 | 10.80 | 46.79 | 54.00 | -7.21 | AVG | | | |
| 9 | | 9324.750 | 39.43 | 16.91 | 56.34 | 74.00 | -17.66 | peak | | | |
| 10 | | 9324.750 | 28.39 | 16.91 | 45.30 | 54.00 | -8.70 | AVG | | | |
| 11 | | 14320.000 | 38.93 | 18.57 | 57.50 | 74.00 | -16.50 | peak | | | |
| 12 | | 14320.000 | 28.06 | 18.57 | 46.63 | 54.00 | -7.37 | AVG | | | |
| 13 | | 17920.000 | 38.33 | 24.84 | 63.17 | 74.00 | -10.83 | peak | | | |
| 14 | | 17920.000 | 17.56 | 24.84 | 42.40 | 54.00 | -11.60 | AVG | | | |
| 15 | | 19253.750 | 38.73 | 22.92 | 61.65 | 74.00 | -12.35 | peak | | | |
| 16 | | 19253.750 | 19.61 | 22.92 | 42.53 | 54.00 | -11.47 | AVG | | | |
| 17 | | 21867.500 | 38.68 | 21.19 | 59.87 | 74.00 | -14.13 | peak | | | |
| 18 | | 21867.500 | 19.90 | 21.19 | 41.09 | 54.00 | -12.91 | AVG | | | |
| 19 | | 25862.500 | 40.64 | 18.67 | 59.31 | 74.00 | -14.69 | peak | | | |
| 20 | | 25862.500 | 21.52 | 18.67 | 40.19 | 54.00 | -13.81 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2437MHz) Data :#17 Date: 2009/9/4 Time: 上午 01:37:46




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: CH06(2437MHz)

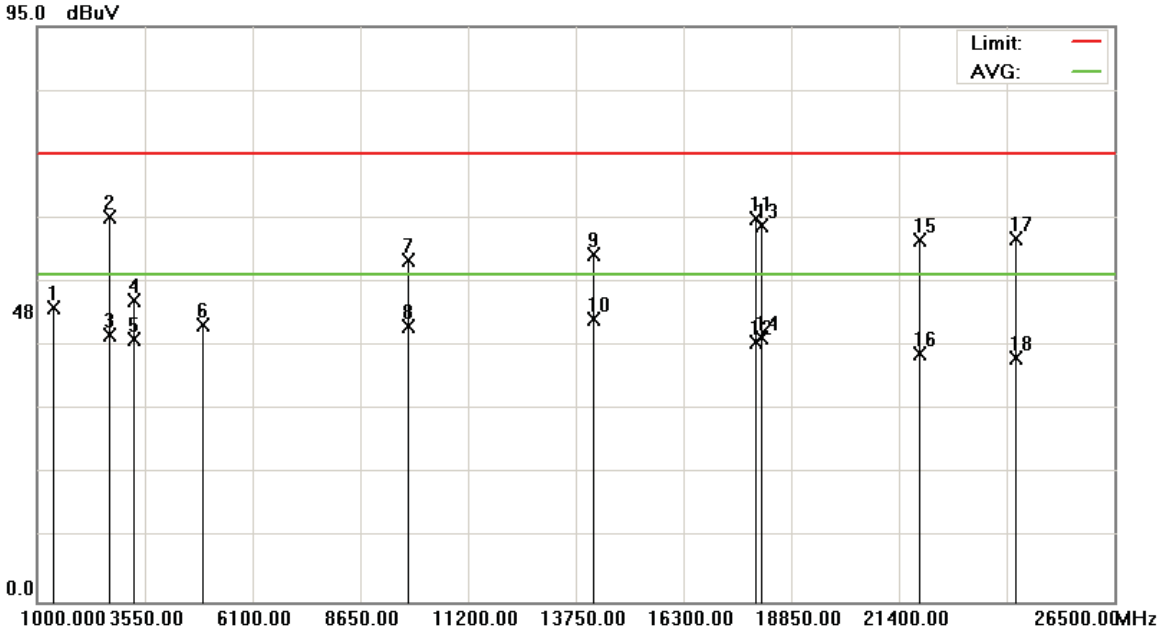
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2239.300 | 50.12 | 0.43 | 50.55 | 74.00 | -23.45 | peak | | | |
| 2 | | 2700.000 | 41.09 | 22.58 | 63.67 | 74.00 | -10.33 | peak | | | |
| 3 | | 2700.000 | 21.48 | 22.58 | 44.06 | 54.00 | -9.94 | AVG | | | |
| 4 | | 3247.500 | 47.54 | 2.41 | 49.95 | 74.00 | -24.05 | peak | | | |
| 5 | | 3247.500 | 38.13 | 2.41 | 40.54 | 54.00 | -13.46 | AVG | | | |
| 6 | | 4874.000 | 38.86 | 7.72 | 46.58 | 74.00 | -27.42 | peak | | | |
| 7 | | 6496.000 | 40.25 | 10.95 | 51.20 | 74.00 | -22.80 | peak | | | |
| 8 | | 6496.000 | 34.22 | 10.95 | 45.17 | 54.00 | -8.83 | AVG | | | |
| 9 | | 9361.250 | 39.91 | 16.98 | 56.89 | 74.00 | -17.11 | peak | | | |
| 10 | | 9361.250 | 27.92 | 16.98 | 44.90 | 54.00 | -9.10 | AVG | | | |
| 11 | | 14120.000 | 38.44 | 18.87 | 57.31 | 74.00 | -16.69 | peak | | | |
| 12 | * | 14120.000 | 27.98 | 18.87 | 46.85 | 54.00 | -7.15 | AVG | | | |
| 13 | | 18000.000 | 38.25 | 25.57 | 63.82 | 74.00 | -10.18 | peak | | | |
| 14 | | 18000.000 | 17.28 | 25.57 | 42.85 | 54.00 | -11.15 | AVG | | | |
| 15 | | 19508.750 | 38.59 | 22.69 | 61.28 | 74.00 | -12.72 | peak | | | |
| 16 | | 19508.750 | 20.03 | 22.69 | 42.72 | 54.00 | -11.28 | AVG | | | |
| 17 | | 21888.750 | 39.11 | 21.18 | 60.29 | 74.00 | -13.71 | peak | | | |
| 18 | | 21888.750 | 19.92 | 21.18 | 41.10 | 54.00 | -12.90 | AVG | | | |
| 19 | | 25947.500 | 41.21 | 18.60 | 59.81 | 74.00 | -14.19 | peak | | | |
| 20 | | 25947.500 | 21.10 | 18.60 | 39.70 | 54.00 | -14.30 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2462MHz) Data :#17 Date: 2009/9/4 Time: 上午 01:44:05




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: CH11(2462MHz)

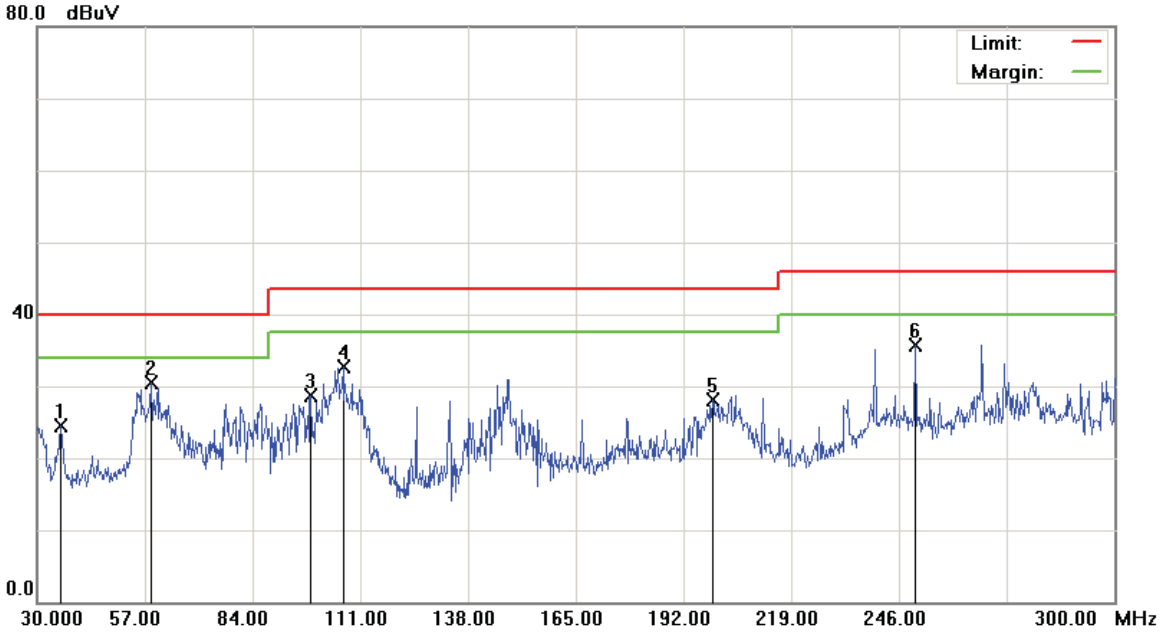
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 1363.800 | 52.31 | -3.68 | 48.63 | 74.00 | -25.37 | peak | | | |
| 2 | | 2700.000 | 41.06 | 22.58 | 63.64 | 74.00 | -10.36 | peak | | | |
| 3 | | 2700.000 | 21.43 | 22.58 | 44.01 | 54.00 | -9.99 | AVG | | | |
| 4 | | 3284.000 | 47.35 | 2.37 | 49.72 | 74.00 | -24.28 | peak | | | |
| 5 | | 3284.000 | 40.89 | 2.37 | 43.26 | 54.00 | -10.74 | AVG | | | |
| 6 | | 4924.000 | 38.07 | 7.65 | 45.72 | 74.00 | -28.28 | peak | | | |
| 7 | | 9781.000 | 38.72 | 17.69 | 56.41 | 74.00 | -17.59 | peak | | | |
| 8 | | 9781.000 | 27.84 | 17.69 | 45.53 | 54.00 | -8.47 | AVG | | | |
| 9 | | 14160.000 | 38.45 | 18.83 | 57.28 | 74.00 | -16.72 | peak | | | |
| 10 | * | 14160.000 | 27.91 | 18.83 | 46.74 | 54.00 | -7.26 | AVG | | | |
| 11 | | 18000.000 | 37.81 | 25.57 | 63.38 | 74.00 | -10.62 | peak | | | |
| 12 | | 18000.000 | 17.29 | 25.57 | 42.86 | 54.00 | -11.14 | AVG | | | |
| 13 | | 18127.500 | 38.83 | 23.23 | 62.06 | 74.00 | -11.94 | peak | | | |
| 14 | | 18127.500 | 20.30 | 23.23 | 43.53 | 54.00 | -10.47 | AVG | | | |
| 15 | | 21867.500 | 38.55 | 21.19 | 59.74 | 74.00 | -14.26 | peak | | | |
| 16 | | 21867.500 | 19.75 | 21.19 | 40.94 | 54.00 | -13.06 | AVG | | | |
| 17 | | 24162.500 | 39.99 | 19.88 | 59.87 | 74.00 | -14.13 | peak | | | |
| 18 | | 24162.500 | 20.26 | 19.88 | 40.14 | 54.00 | -13.86 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(WIFI) Data :#7 Date: 2009/9/4 Time: 上午 03:09:21




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note:

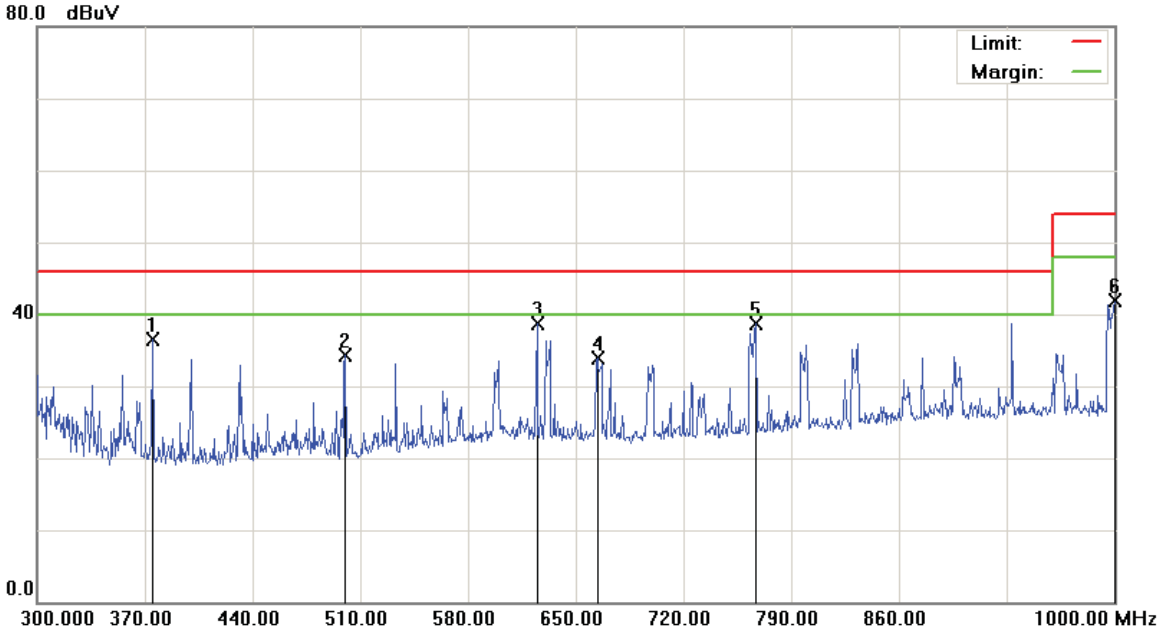
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 35.9400 | 37.49 | -12.95 | 24.54 | 40.00 | -15.46 | peak | | | |
| 2 | * | 58.6200 | 42.96 | -12.45 | 30.51 | 40.00 | -9.49 | peak | | | |
| 3 | | 98.5800 | 40.51 | -11.84 | 28.67 | 43.50 | -14.83 | peak | | | |
| 4 | | 106.6800 | 45.03 | -12.23 | 32.80 | 43.50 | -10.70 | peak | | | |
| 5 | | 199.2900 | 41.33 | -13.17 | 28.16 | 43.50 | -15.34 | peak | | | |
| 6 | | 250.0500 | 46.58 | -10.82 | 35.76 | 46.00 | -10.24 | peak | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(WIFI) Data :#8 Date: 2009/9/4 Time: 上午 03:13:36




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note:

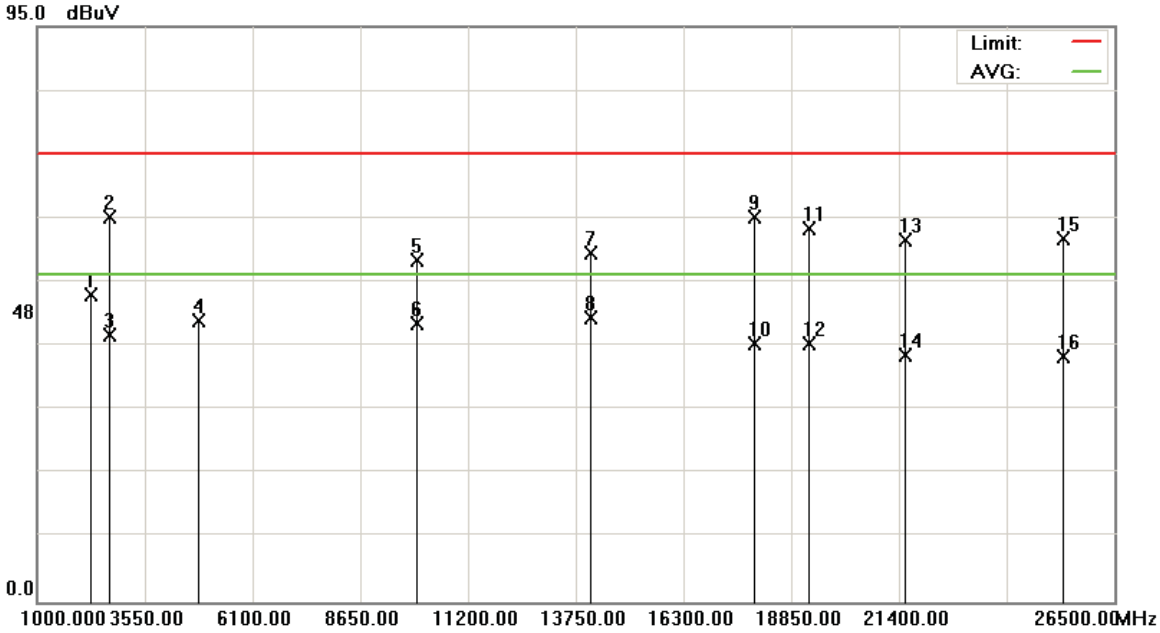
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 374.9000 | 45.40 | -8.95 | 36.45 | 46.00 | -9.55 | peak | | | |
| 2 | | 500.2000 | 41.50 | -7.17 | 34.33 | 46.00 | -11.67 | peak | | | |
| 3 | * | 624.8000 | 43.36 | -4.64 | 38.72 | 46.00 | -7.28 | peak | | | |
| 4 | | 664.0000 | 38.32 | -4.43 | 33.89 | 46.00 | -12.11 | peak | | | |
| 5 | | 766.9000 | 41.43 | -2.75 | 38.68 | 46.00 | -7.32 | peak | | | |
| 6 | | 1000.0000 | 41.24 | 0.62 | 41.86 | 54.00 | -12.14 | peak | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2412MHz) Data :#18 Date: 2009/9/4 Time: 上午 01:32:51




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: CH01(2412MHz)

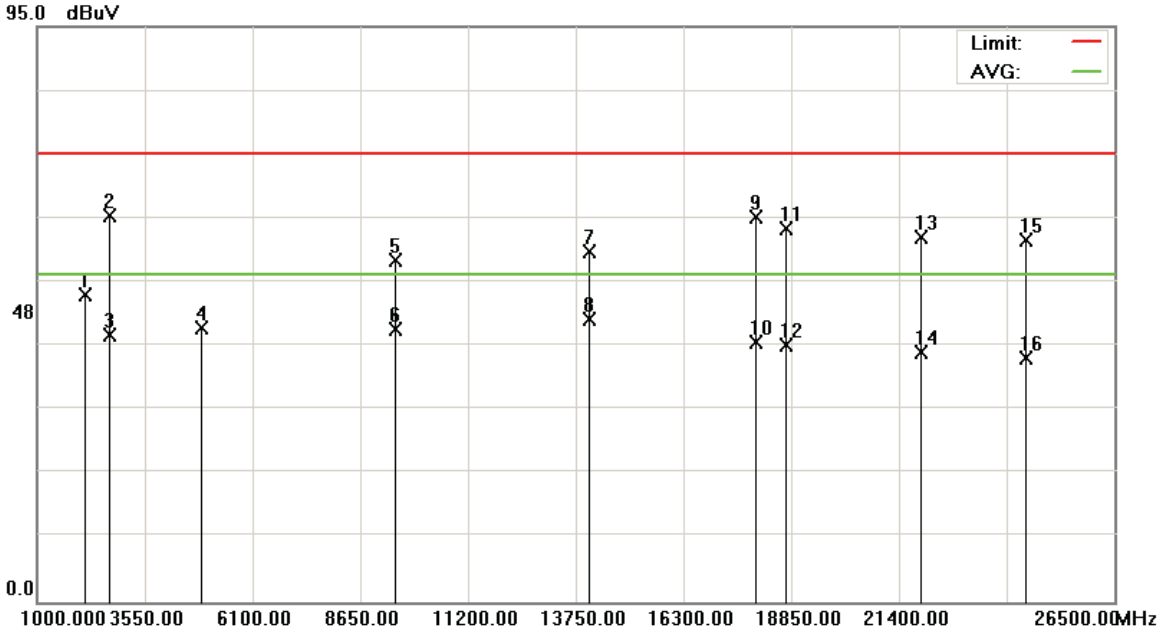
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2263.100 | 50.25 | 0.45 | 50.70 | 74.00 | -23.30 | peak | | | |
| 2 | | 2700.000 | 40.93 | 22.58 | 63.51 | 74.00 | -10.49 | peak | | | |
| 3 | | 2700.000 | 21.37 | 22.58 | 43.95 | 54.00 | -10.05 | AVG | | | |
| 4 | | 4824.000 | 38.98 | 7.48 | 46.46 | 74.00 | -27.54 | peak | | | |
| 5 | | 10000.000 | 38.48 | 17.94 | 56.42 | 74.00 | -17.58 | peak | | | |
| 6 | | 10000.000 | 27.94 | 17.94 | 45.88 | 54.00 | -8.12 | AVG | | | |
| 7 | | 14100.000 | 38.70 | 18.90 | 57.60 | 74.00 | -16.40 | peak | | | |
| 8 | * | 14100.000 | 27.91 | 18.90 | 46.81 | 54.00 | -7.19 | AVG | | | |
| 9 | | 17980.000 | 38.25 | 25.21 | 63.46 | 74.00 | -10.54 | peak | | | |
| 10 | | 17980.000 | 17.44 | 25.21 | 42.65 | 54.00 | -11.35 | AVG | | | |
| 11 | | 19275.000 | 38.69 | 22.91 | 61.60 | 74.00 | -12.40 | peak | | | |
| 12 | | 19275.000 | 19.73 | 22.91 | 42.64 | 54.00 | -11.36 | AVG | | | |
| 13 | | 21548.750 | 38.52 | 21.33 | 59.85 | 74.00 | -14.15 | peak | | | |
| 14 | | 21548.750 | 19.42 | 21.33 | 40.75 | 54.00 | -13.25 | AVG | | | |
| 15 | | 25288.750 | 40.87 | 19.11 | 59.98 | 74.00 | -14.02 | peak | | | |
| 16 | | 25288.750 | 21.31 | 19.11 | 40.42 | 54.00 | -13.58 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2437MHz) Data :#18 Date: 2009/9/4 Time: 上午 01:41:11




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: CH06(2437MHz)

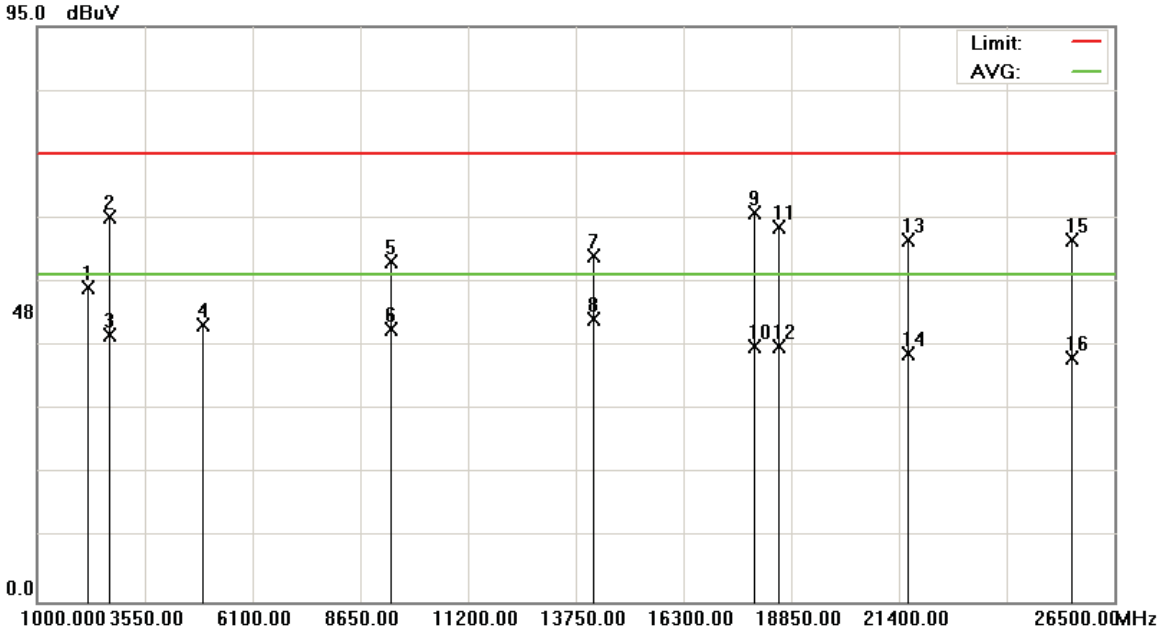
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2123.700 | 51.09 | -0.29 | 50.80 | 74.00 | -23.20 | peak | | | |
| 2 | | 2700.000 | 41.25 | 22.58 | 63.83 | 74.00 | -10.17 | peak | | | |
| 3 | | 2700.000 | 21.40 | 22.58 | 43.98 | 54.00 | -10.02 | AVG | | | |
| 4 | | 4874.000 | 37.61 | 7.72 | 45.33 | 74.00 | -28.67 | peak | | | |
| 5 | | 9452.500 | 39.43 | 17.00 | 56.43 | 74.00 | -17.57 | peak | | | |
| 6 | | 9452.500 | 27.89 | 17.00 | 44.89 | 54.00 | -9.11 | AVG | | | |
| 7 | | 14080.000 | 39.05 | 18.81 | 57.86 | 74.00 | -16.14 | peak | | | |
| 8 | * | 14080.000 | 27.90 | 18.81 | 46.71 | 54.00 | -7.29 | AVG | | | |
| 9 | | 18000.000 | 37.96 | 25.57 | 63.53 | 74.00 | -10.47 | peak | | | |
| 10 | | 18000.000 | 17.27 | 25.57 | 42.84 | 54.00 | -11.16 | AVG | | | |
| 11 | | 18722.500 | 38.42 | 23.12 | 61.54 | 74.00 | -12.46 | peak | | | |
| 12 | | 18722.500 | 19.21 | 23.12 | 42.33 | 54.00 | -11.67 | AVG | | | |
| 13 | | 21888.750 | 38.93 | 21.18 | 60.11 | 74.00 | -13.89 | peak | | | |
| 14 | | 21888.750 | 19.98 | 21.18 | 41.16 | 54.00 | -12.84 | AVG | | | |
| 15 | | 24396.250 | 40.12 | 19.72 | 59.84 | 74.00 | -14.16 | peak | | | |
| 16 | | 24396.250 | 20.48 | 19.72 | 40.20 | 54.00 | -13.80 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2462MHz) Data :#18 Date: 2009/9/4 Time: 上午 01:47:38




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: CH11(2462MHz)

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2181.500 | 51.61 | 0.26 | 51.87 | 74.00 | -22.13 | peak | | | |
| 2 | | 2700.000 | 40.99 | 22.58 | 63.57 | 74.00 | -10.43 | peak | | | |
| 3 | | 2700.000 | 21.39 | 22.58 | 43.97 | 54.00 | -10.03 | AVG | | | |
| 4 | | 4924.000 | 37.97 | 7.65 | 45.62 | 74.00 | -28.38 | peak | | | |
| 5 | | 9343.000 | 39.23 | 16.93 | 56.16 | 74.00 | -17.84 | peak | | | |
| 6 | | 9343.000 | 28.13 | 16.93 | 45.06 | 54.00 | -8.94 | AVG | | | |
| 7 | | 14180.000 | 28.67 | 28.39 | 57.06 | 74.00 | -16.94 | peak | | | |
| 8 | * | 14180.000 | 18.38 | 28.39 | 46.77 | 54.00 | -7.23 | AVG | | | |
| 9 | | 17960.000 | 29.78 | 34.38 | 64.16 | 74.00 | -9.84 | peak | | | |
| 10 | | 17960.000 | 7.79 | 34.38 | 42.17 | 54.00 | -11.83 | AVG | | | |
| 11 | | 18552.500 | 38.69 | 23.08 | 61.77 | 74.00 | -12.23 | peak | | | |
| 12 | | 18552.500 | 19.05 | 23.08 | 42.13 | 54.00 | -11.87 | AVG | | | |
| 13 | | 21591.250 | 38.51 | 21.30 | 59.81 | 74.00 | -14.19 | peak | | | |
| 14 | | 21591.250 | 19.66 | 21.30 | 40.96 | 54.00 | -13.04 | AVG | | | |
| 15 | | 25501.250 | 40.83 | 18.98 | 59.81 | 74.00 | -14.19 | peak | | | |
| 16 | | 25501.250 | 21.21 | 18.98 | 40.19 | 54.00 | -13.81 | AVG | | | |

*:Maximum data x:Over limit !:over margin

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11g Link Mode

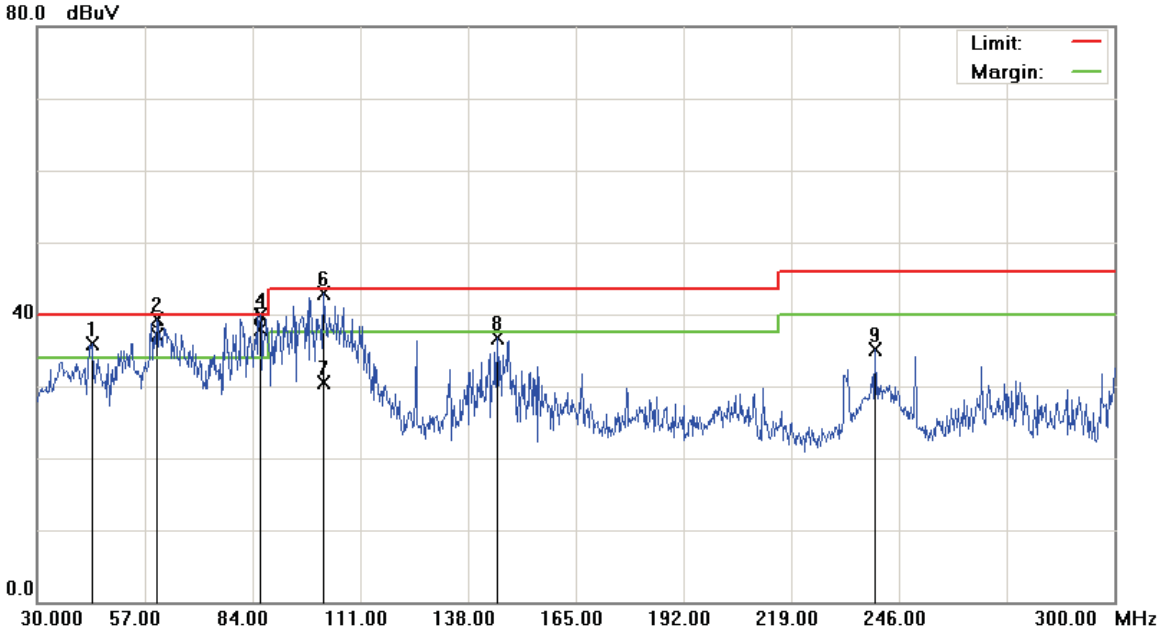
Test Date : 09/04/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Distance of Measurement: 3 Meter (30-1000MHz) & (1-10GHz), 1 Meter (10-26.5GHz)
3. Height of table for EUT placed: 0.8 Meter.
4. ANT= Antenna height.
5. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor
   (Auto calculate in spectrum analyzer)
6. The EUT was worst case on X axis after pretest on X & Y & Z axis setting.
7. The testing data only show below 18GHz's data because measure data above 18GHz was only ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested

File :FCC(WIFI) Data :#5 Date: 2009/9/4 Time: 上午 03:00:54




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note:

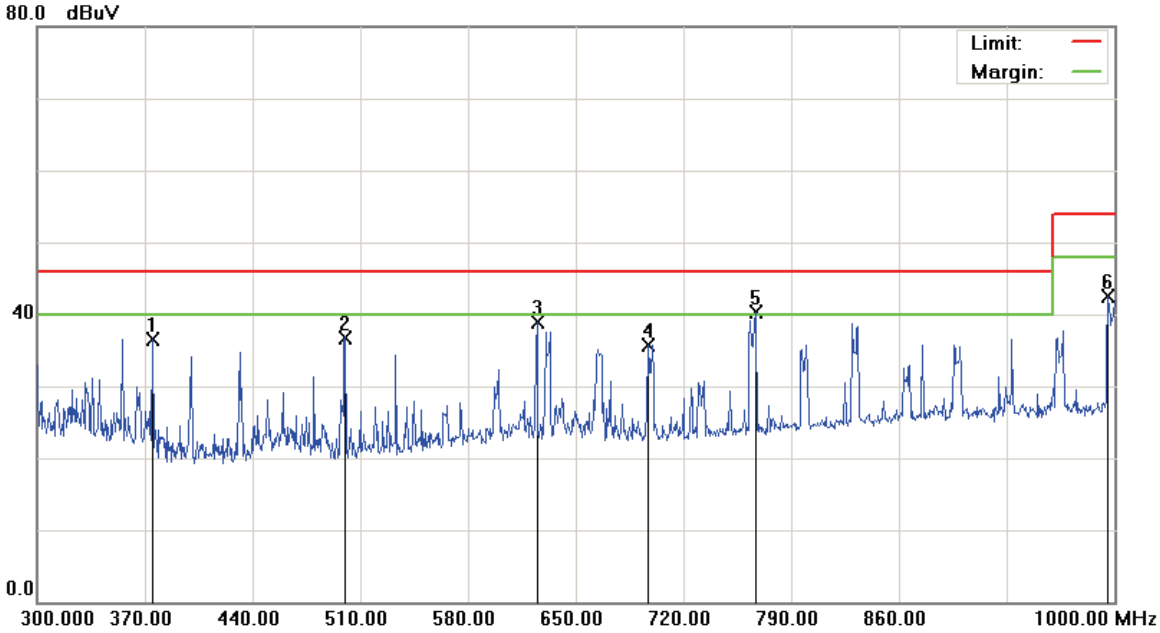
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | ! | 43.7700 | 47.81 | -11.84 | 35.97 | 40.00 | -4.03 | peak | | | |
| 2 | ! | 59.9700 | 51.87 | -12.54 | 39.33 | 40.00 | -0.67 | peak | | | |
| 3 | ! | 59.9700 | 49.60 | -12.54 | 37.06 | 40.00 | -2.94 | QP | | | |
| 4 | * | 85.8900 | 54.31 | -14.46 | 39.85 | 40.00 | -0.15 | peak | | | |
| 5 | ! | 85.8900 | 52.34 | -14.46 | 37.88 | 40.00 | -2.12 | QP | | | |
| 6 | ! | 101.8200 | 54.86 | -11.88 | 42.98 | 43.50 | -0.52 | peak | | | |
| 7 | | 101.8200 | 42.38 | -11.88 | 30.50 | 43.50 | -13.00 | QP | | | |
| 8 | | 145.2900 | 52.81 | -16.17 | 36.64 | 43.50 | -6.86 | peak | | | |
| 9 | | 240.0600 | 46.45 | -11.43 | 35.02 | 46.00 | -10.98 | peak | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(WIFI) Data :#6 Date: 2009/9/4 Time: 上午 03:05:08




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note:

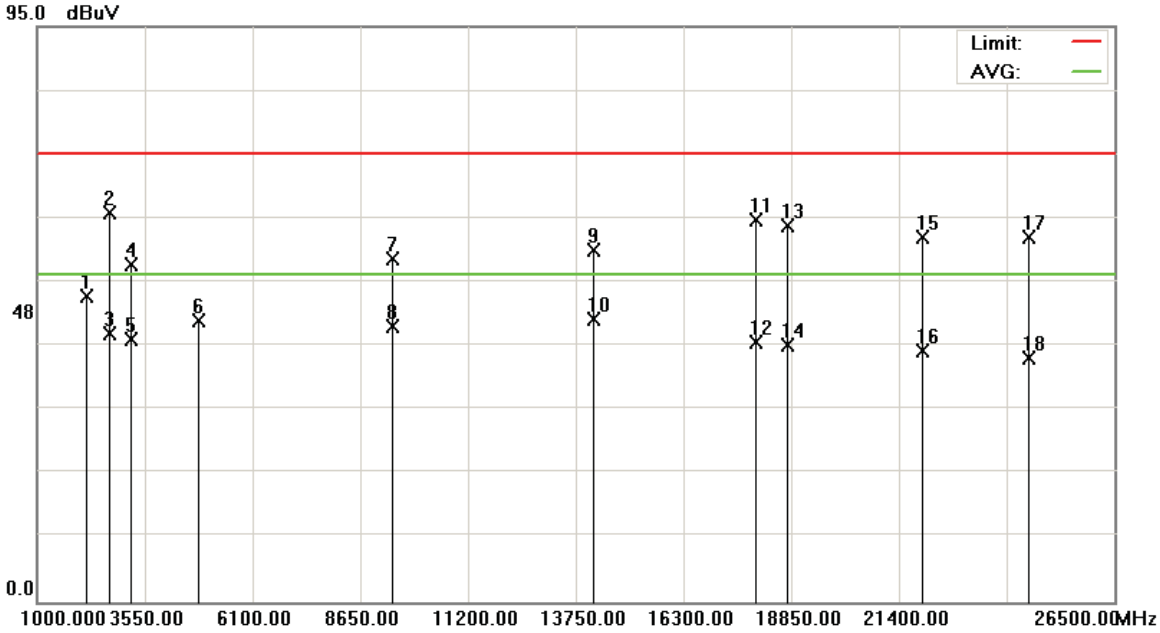
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 374.9000 | 45.54 | -8.95 | 36.59 | 46.00 | -9.41 | peak | | | |
| 2 | | 500.2000 | 43.97 | -7.17 | 36.80 | 46.00 | -9.20 | peak | | | |
| 3 | | 624.8000 | 43.47 | -4.64 | 38.83 | 46.00 | -7.17 | peak | | | |
| 4 | | 696.9000 | 39.52 | -3.85 | 35.67 | 46.00 | -10.33 | peak | | | |
| 5 | * | 766.9000 | 43.00 | -2.75 | 40.25 | 46.00 | -5.75 | peak | | | |
| 6 | | 995.8000 | 41.72 | 0.75 | 42.47 | 54.00 | -11.53 | peak | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2412MHz) Data :#17 Date: 2009/9/4 Time: 上午 12:52:30




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: CH01(2412MHz)

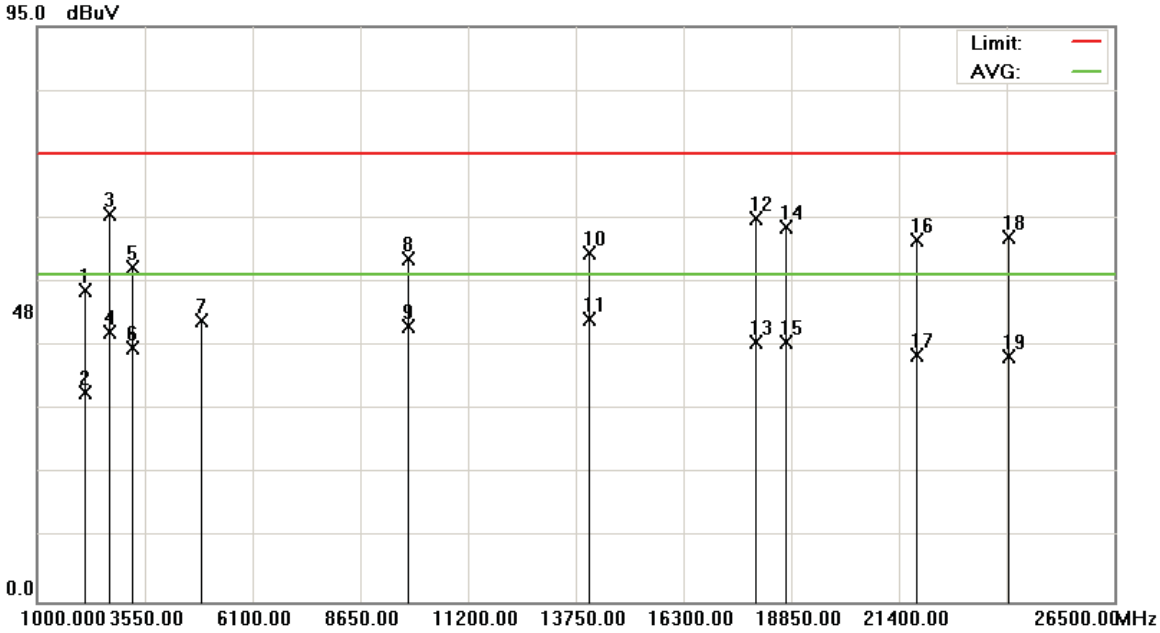
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2169.600 | 50.31 | 0.16 | 50.47 | 74.00 | -23.53 | peak | | | |
| 2 | | 2700.000 | 41.57 | 22.58 | 64.15 | 74.00 | -9.85 | peak | | | |
| 3 | | 2700.000 | 21.83 | 22.58 | 44.41 | 54.00 | -9.59 | AVG | | | |
| 4 | | 3211.000 | 52.80 | 2.85 | 55.65 | 74.00 | -18.35 | peak | | | |
| 5 | | 3211.000 | 40.53 | 2.85 | 43.38 | 54.00 | -10.62 | AVG | | | |
| 6 | | 4824.000 | 38.96 | 7.48 | 46.44 | 74.00 | -27.56 | peak | | | |
| 7 | | 9397.750 | 39.59 | 17.08 | 56.67 | 74.00 | -17.33 | peak | | | |
| 8 | | 9397.750 | 28.34 | 17.08 | 45.42 | 54.00 | -8.58 | AVG | | | |
| 9 | | 14180.000 | 39.16 | 18.85 | 58.01 | 74.00 | -15.99 | peak | | | |
| 10 | * | 14180.000 | 27.93 | 18.85 | 46.78 | 54.00 | -7.22 | AVG | | | |
| 11 | | 18000.000 | 37.59 | 25.57 | 63.16 | 74.00 | -10.84 | peak | | | |
| 12 | | 18000.000 | 17.29 | 25.57 | 42.86 | 54.00 | -11.14 | AVG | | | |
| 13 | | 18765.000 | 38.93 | 23.13 | 62.06 | 74.00 | -11.94 | peak | | | |
| 14 | | 18765.000 | 19.26 | 23.13 | 42.39 | 54.00 | -11.61 | AVG | | | |
| 15 | | 21952.500 | 38.94 | 21.15 | 60.09 | 74.00 | -13.91 | peak | | | |
| 16 | | 21952.500 | 20.28 | 21.15 | 41.43 | 54.00 | -12.57 | AVG | | | |
| 17 | | 24438.750 | 40.50 | 19.69 | 60.19 | 74.00 | -13.81 | peak | | | |
| 18 | | 24438.750 | 20.67 | 19.69 | 40.36 | 54.00 | -13.64 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2437MHz) Data :#17 Date: 2009/9/4 Time: 上午 12:47:29




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: CH06(2437MHz)

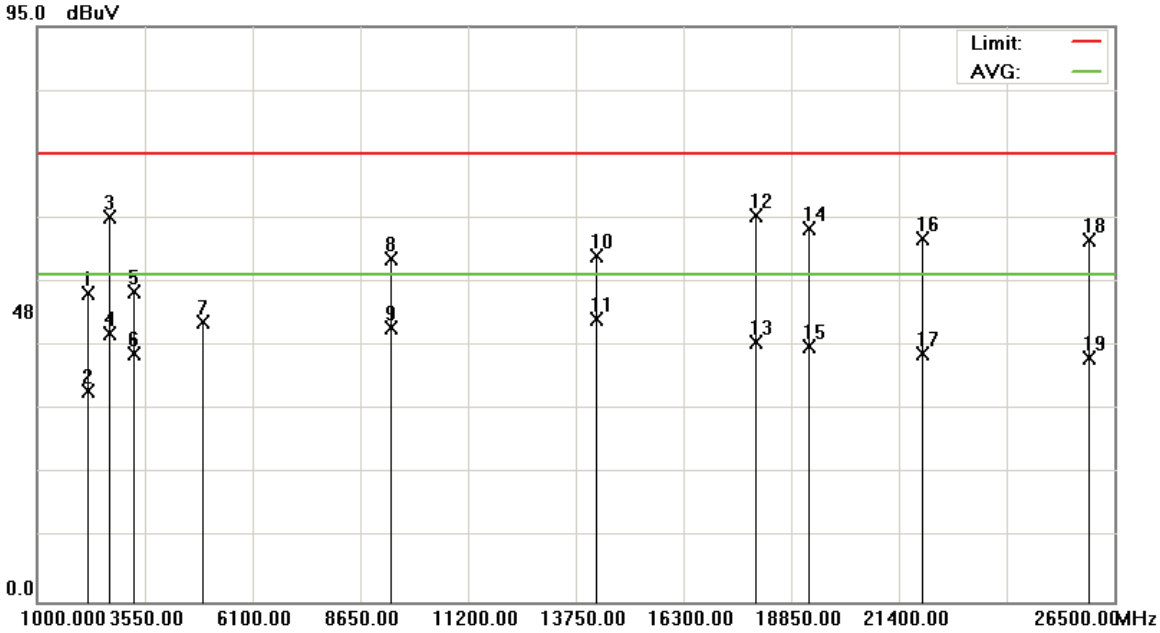
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2144.100 | 51.42 | -0.01 | 51.41 | 74.00 | -22.59 | peak | | | |
| 2 | | 2144.100 | 34.64 | -0.01 | 34.63 | 54.00 | -19.37 | AVG | | | |
| 3 | | 2700.000 | 41.48 | 22.58 | 64.06 | 74.00 | -9.94 | peak | | | |
| 4 | | 2700.000 | 21.89 | 22.58 | 44.47 | 54.00 | -9.53 | AVG | | | |
| 5 | | 3247.500 | 52.74 | 2.41 | 55.15 | 74.00 | -18.85 | peak | | | |
| 6 | | 3247.500 | 39.43 | 2.41 | 41.84 | 54.00 | -12.16 | AVG | | | |
| 7 | | 4874.000 | 38.64 | 7.72 | 46.36 | 74.00 | -27.64 | peak | | | |
| 8 | | 9762.750 | 38.89 | 17.70 | 56.59 | 74.00 | -17.41 | peak | | | |
| 9 | | 9762.750 | 27.71 | 17.70 | 45.41 | 54.00 | -8.59 | AVG | | | |
| 10 | | 14080.000 | 29.14 | 28.35 | 57.49 | 74.00 | -16.51 | peak | | | |
| 11 | * | 14080.000 | 18.31 | 28.35 | 46.66 | 54.00 | -7.34 | AVG | | | |
| 12 | | 18000.000 | 28.10 | 35.11 | 63.21 | 74.00 | -10.79 | peak | | | |
| 13 | | 18000.000 | 7.76 | 35.11 | 42.87 | 54.00 | -11.13 | AVG | | | |
| 14 | | 18722.500 | 38.78 | 23.12 | 61.90 | 74.00 | -12.10 | peak | | | |
| 15 | | 18722.500 | 19.74 | 23.12 | 42.86 | 54.00 | -11.14 | AVG | | | |
| 16 | | 21803.750 | 38.55 | 21.21 | 59.76 | 74.00 | -14.24 | peak | | | |
| 17 | | 21803.750 | 19.57 | 21.21 | 40.78 | 54.00 | -13.22 | AVG | | | |
| 18 | | 23992.500 | 40.21 | 20.03 | 60.24 | 74.00 | -13.76 | peak | | | |
| 19 | | 23992.500 | 20.49 | 20.03 | 40.52 | 54.00 | -13.48 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2462MHz) Data :#17 Date: 2009/9/4 Time: 上午 12:36:48




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: CH11(2462MHz)

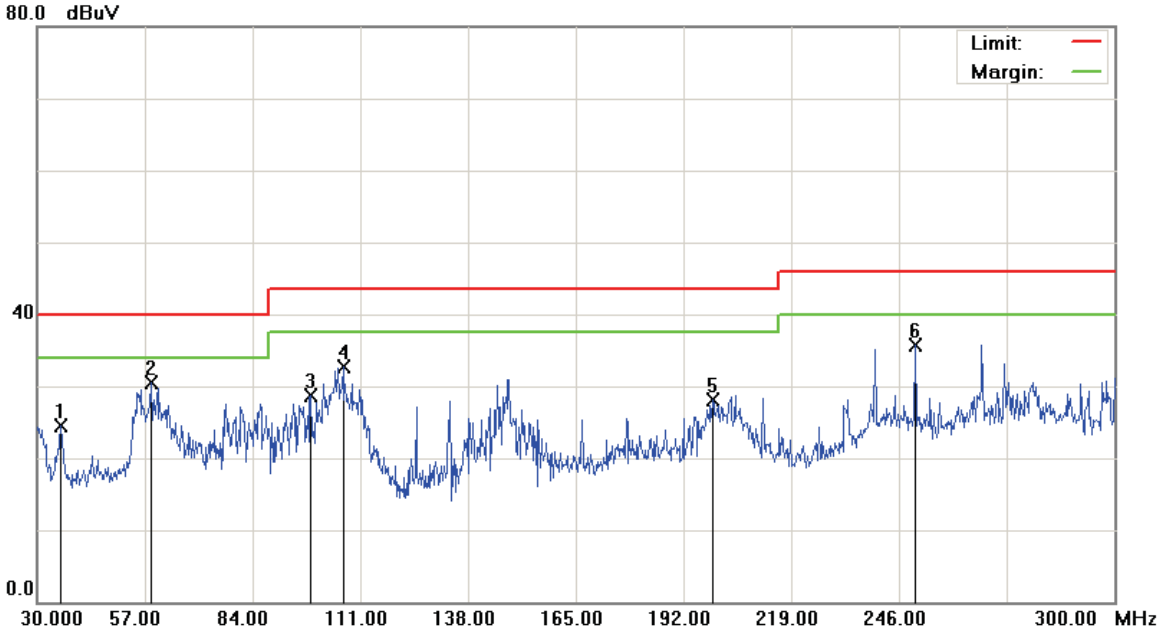
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2181.500 | 50.79 | 0.26 | 51.05 | 74.00 | -22.95 | peak | | | |
| 2 | | 2181.500 | 34.59 | 0.26 | 34.85 | 54.00 | -19.15 | AVG | | | |
| 3 | | 2700.000 | 41.07 | 22.58 | 63.65 | 74.00 | -10.35 | peak | | | |
| 4 | | 2700.000 | 21.65 | 22.58 | 44.23 | 54.00 | -9.77 | AVG | | | |
| 5 | | 3284.000 | 48.83 | 2.37 | 51.20 | 74.00 | -22.80 | peak | | | |
| 6 | | 3284.000 | 38.62 | 2.37 | 40.99 | 54.00 | -13.01 | AVG | | | |
| 7 | | 4924.000 | 38.54 | 7.65 | 46.19 | 74.00 | -27.81 | peak | | | |
| 8 | | 9361.250 | 39.61 | 16.98 | 56.59 | 74.00 | -17.41 | peak | | | |
| 9 | | 9361.250 | 28.32 | 16.98 | 45.30 | 54.00 | -8.70 | AVG | | | |
| 10 | | 14220.000 | 38.44 | 18.78 | 57.22 | 74.00 | -16.78 | peak | | | |
| 11 | * | 14220.000 | 27.93 | 18.78 | 46.71 | 54.00 | -7.29 | AVG | | | |
| 12 | | 18000.000 | 38.31 | 25.57 | 63.88 | 74.00 | -10.12 | peak | | | |
| 13 | | 18000.000 | 17.30 | 25.57 | 42.87 | 54.00 | -11.13 | AVG | | | |
| 14 | | 19275.000 | 38.78 | 22.91 | 61.69 | 74.00 | -12.31 | peak | | | |
| 15 | | 19275.000 | 19.21 | 22.91 | 42.12 | 54.00 | -11.88 | AVG | | | |
| 16 | | 21952.500 | 38.86 | 21.15 | 60.01 | 74.00 | -13.99 | peak | | | |
| 17 | | 21952.500 | 19.87 | 21.15 | 41.02 | 54.00 | -12.98 | AVG | | | |
| 18 | | 25883.750 | 41.02 | 18.65 | 59.67 | 74.00 | -14.33 | peak | | | |
| 19 | | 25883.750 | 21.71 | 18.65 | 40.36 | 54.00 | -13.64 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(WIFI) Data :#7 Date: 2009/9/4 Time: 上午 03:09:21




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note:

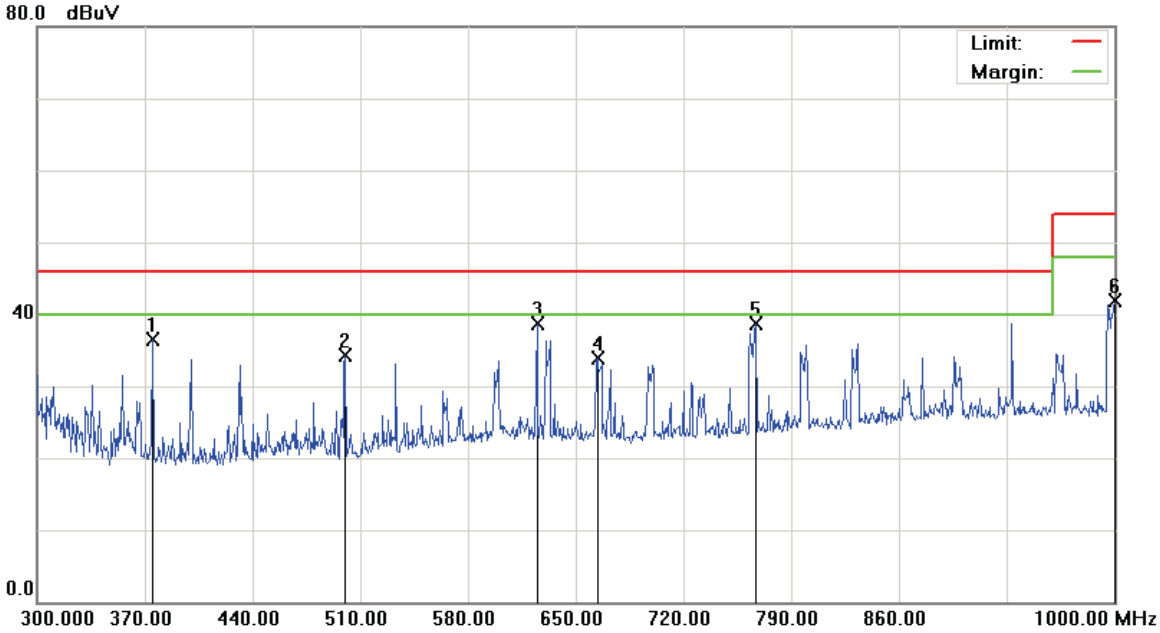
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 35.9400 | 37.49 | -12.95 | 24.54 | 40.00 | -15.46 | peak | | | |
| 2 | * | 58.6200 | 42.96 | -12.45 | 30.51 | 40.00 | -9.49 | peak | | | |
| 3 | | 98.5800 | 40.51 | -11.84 | 28.67 | 43.50 | -14.83 | peak | | | |
| 4 | | 106.6800 | 45.03 | -12.23 | 32.80 | 43.50 | -10.70 | peak | | | |
| 5 | | 199.2900 | 41.33 | -13.17 | 28.16 | 43.50 | -15.34 | peak | | | |
| 6 | | 250.0500 | 46.58 | -10.82 | 35.76 | 46.00 | -10.24 | peak | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(WIFI) Data :#8 Date: 2009/9/4 Time: 上午 03:13:36




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note:

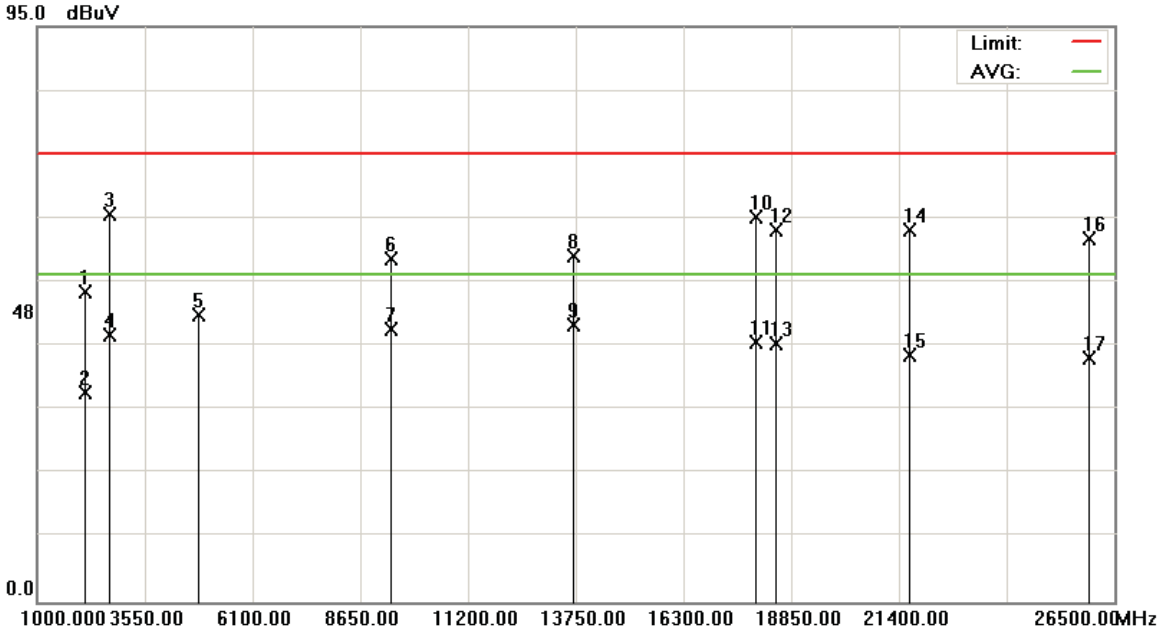
Polarization: ***Horizontal***
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 374.9000 | 45.40 | -8.95 | 36.45 | 46.00 | -9.55 | peak | | | |
| 2 | | 500.2000 | 41.50 | -7.17 | 34.33 | 46.00 | -11.67 | peak | | | |
| 3 | * | 624.8000 | 43.36 | -4.64 | 38.72 | 46.00 | -7.28 | peak | | | |
| 4 | | 664.0000 | 38.32 | -4.43 | 33.89 | 46.00 | -12.11 | peak | | | |
| 5 | | 766.9000 | 41.43 | -2.75 | 38.68 | 46.00 | -7.32 | peak | | | |
| 6 | | 1000.0000 | 41.24 | 0.62 | 41.86 | 54.00 | -12.14 | peak | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2412MHz) Data :#18 Date: 2009/9/4 Time: 上午 01:20:10




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: CH01(2412MHz)

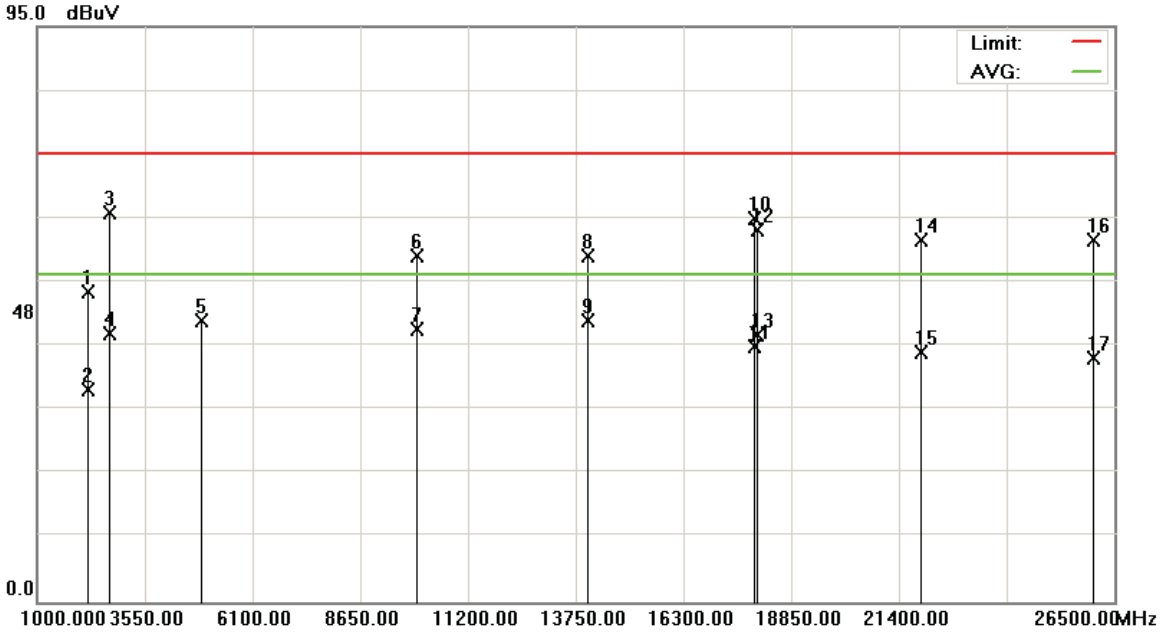
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2139.000 | 51.40 | -0.12 | 51.28 | 74.00 | -22.72 | peak | | | |
| 2 | | 2139.000 | 34.56 | -0.12 | 34.44 | 54.00 | -19.56 | AVG | | | |
| 3 | | 2700.000 | 41.45 | 22.58 | 64.03 | 74.00 | -9.97 | peak | | | |
| 4 | | 2700.000 | 21.47 | 22.58 | 44.05 | 54.00 | -9.95 | AVG | | | |
| 5 | | 4824.000 | 39.89 | 7.48 | 47.37 | 74.00 | -26.63 | peak | | | |
| 6 | | 9343.000 | 39.79 | 16.93 | 56.72 | 74.00 | -17.28 | peak | | | |
| 7 | | 9343.000 | 28.05 | 16.93 | 44.98 | 54.00 | -9.02 | AVG | | | |
| 8 | | 13680.000 | 39.27 | 17.89 | 57.16 | 74.00 | -16.84 | peak | | | |
| 9 | * | 13680.000 | 27.85 | 17.89 | 45.74 | 54.00 | -8.26 | AVG | | | |
| 10 | | 18000.000 | 38.01 | 25.57 | 63.58 | 74.00 | -10.42 | peak | | | |
| 11 | | 18000.000 | 17.32 | 25.57 | 42.89 | 54.00 | -11.11 | AVG | | | |
| 12 | | 18488.750 | 38.35 | 23.12 | 61.47 | 74.00 | -12.53 | peak | | | |
| 13 | | 18488.750 | 19.42 | 23.12 | 42.54 | 54.00 | -11.46 | AVG | | | |
| 14 | | 21633.750 | 40.23 | 21.28 | 61.51 | 74.00 | -12.49 | peak | | | |
| 15 | | 21633.750 | 19.42 | 21.28 | 40.70 | 54.00 | -13.30 | AVG | | | |
| 16 | | 25905.000 | 41.30 | 18.63 | 59.93 | 74.00 | -14.07 | peak | | | |
| 17 | | 25905.000 | 21.54 | 18.63 | 40.17 | 54.00 | -13.83 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2437MHz) Data :#18 Date: 2009/9/4 Time: 上午 12:44:05




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: CH06(2437MHz)

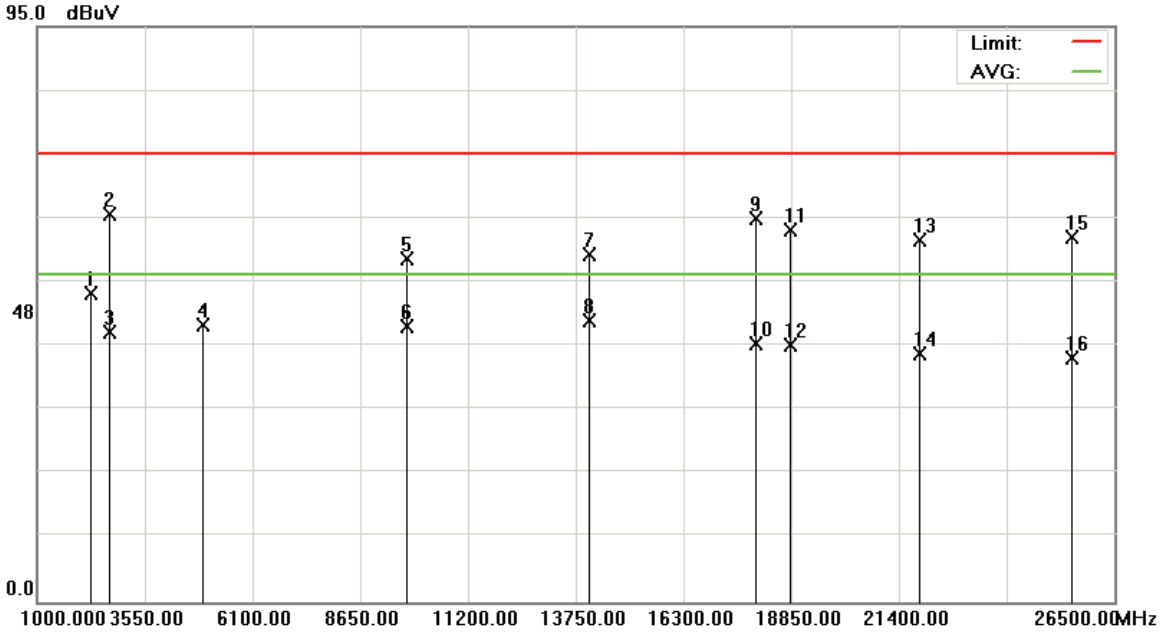
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2188.300 | 50.70 | 0.40 | 51.10 | 74.00 | -22.90 | peak | | | |
| 2 | | 2188.300 | 34.52 | 0.40 | 34.92 | 54.00 | -19.08 | AVG | | | |
| 3 | | 2700.000 | 41.75 | 22.58 | 64.33 | 74.00 | -9.67 | peak | | | |
| 4 | | 2700.000 | 21.82 | 22.58 | 44.40 | 54.00 | -9.60 | AVG | | | |
| 5 | | 4874.000 | 38.65 | 7.72 | 46.37 | 74.00 | -27.63 | peak | | | |
| 6 | | 10000.000 | 39.12 | 17.94 | 57.06 | 74.00 | -16.94 | peak | | | |
| 7 | | 10000.000 | 26.97 | 17.94 | 44.91 | 54.00 | -9.09 | AVG | | | |
| 8 | | 14020.000 | 28.91 | 28.21 | 57.12 | 74.00 | -16.88 | peak | | | |
| 9 | * | 14020.000 | 18.30 | 28.21 | 46.51 | 54.00 | -7.49 | AVG | | | |
| 10 | | 17960.000 | 29.01 | 34.38 | 63.39 | 74.00 | -10.61 | peak | | | |
| 11 | | 17960.000 | 7.80 | 34.38 | 42.18 | 54.00 | -11.82 | AVG | | | |
| 12 | | 18042.500 | 38.07 | 23.27 | 61.34 | 74.00 | -12.66 | peak | | | |
| 13 | | 18042.500 | 20.79 | 23.27 | 44.06 | 54.00 | -9.94 | AVG | | | |
| 14 | | 21910.000 | 38.69 | 21.16 | 59.85 | 74.00 | -14.15 | peak | | | |
| 15 | | 21910.000 | 20.08 | 21.16 | 41.24 | 54.00 | -12.76 | AVG | | | |
| 16 | | 26011.250 | 41.28 | 18.54 | 59.82 | 74.00 | -14.18 | peak | | | |
| 17 | | 26011.250 | 21.80 | 18.54 | 40.34 | 54.00 | -13.66 | AVG | | | |

*:Maximum data x:Over limit !:over margin

File :FCC(2462MHz) Data :#18 Date: 2009/9/4 Time: 上午 12:39:59




Site: site #1
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: CH11(2462MHz)

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2261.400 | 50.55 | 0.45 | 51.00 | 74.00 | -23.00 | peak | | | |
| 2 | | 2700.000 | 41.48 | 22.58 | 64.06 | 74.00 | -9.94 | peak | | | |
| 3 | | 2700.000 | 21.99 | 22.58 | 44.57 | 54.00 | -9.43 | AVG | | | |
| 4 | | 4924.000 | 38.13 | 7.65 | 45.78 | 74.00 | -28.22 | peak | | | |
| 5 | | 9726.250 | 39.05 | 17.60 | 56.65 | 74.00 | -17.35 | peak | | | |
| 6 | | 9726.250 | 27.93 | 17.60 | 45.53 | 54.00 | -8.47 | AVG | | | |
| 7 | | 14040.000 | 38.79 | 18.66 | 57.45 | 74.00 | -16.55 | peak | | | |
| 8 | * | 14040.000 | 27.84 | 18.66 | 46.50 | 54.00 | -7.50 | AVG | | | |
| 9 | | 18000.000 | 37.74 | 25.57 | 63.31 | 74.00 | -10.69 | peak | | | |
| 10 | | 18000.000 | 17.00 | 25.57 | 42.57 | 54.00 | -11.43 | AVG | | | |
| 11 | | 18807.500 | 38.26 | 23.16 | 61.42 | 74.00 | -12.58 | peak | | | |
| 12 | | 18807.500 | 19.24 | 23.16 | 42.40 | 54.00 | -11.60 | AVG | | | |
| 13 | | 21867.500 | 38.65 | 21.19 | 59.84 | 74.00 | -14.16 | peak | | | |
| 14 | | 21867.500 | 19.87 | 21.19 | 41.06 | 54.00 | -12.94 | AVG | | | |
| 15 | | 25501.250 | 41.20 | 18.98 | 60.18 | 74.00 | -13.82 | peak | | | |
| 16 | | 25501.250 | 21.26 | 18.98 | 40.24 | 54.00 | -13.76 | AVG | | | |

*:Maximum data x:Over limit !:over margin

# 4. Maximum Conducted Output Power Requirements

## 4.1 Test Procedure

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to spectrum analyzer. The maximum peak output power shall not exceed 1 watt.

Use a direct connection between the antenna port of transmitter and the spectrum Analyzer, for prevent the spectrum analyzer input attenuation 40-50 dB. And connect 10dB Attenuator**.** Set the RBW Bandwidth of the emission or use a channel power meter mode.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to (GAIN - 6)/3 dBm.

The antenna port of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

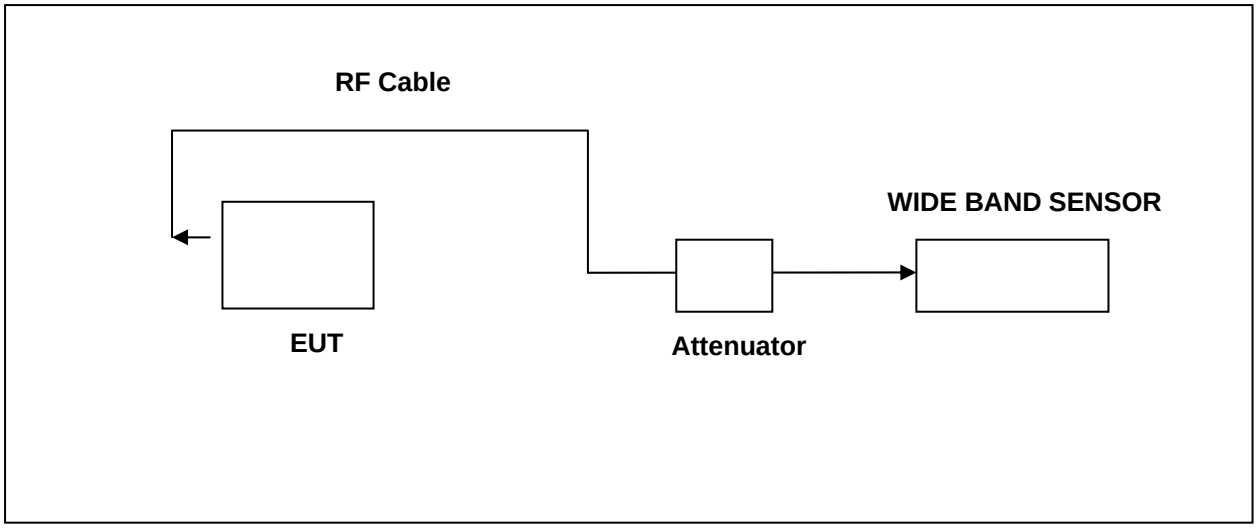
## 4.2 Limits

For systems using digital modulation in the 2400 - 2483.5 MHz bands: 1 Watt.

## 4.3 Test Equipment List

| Describe | Manufacturer | Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Cal. Date | Due Date |
| WIDE BAND SENSOR | R&S | NRP-Z81 | 100017 | May 17, 2009 | May 17, 2010 |
| Attenuator | RADIALL | R415710000 | 0603033065 | NA | NA |

## 4.4 Test Instruments Configuration




## 4.5 Test Result

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11b Link Mode

Test Date : 09/04/2009

| Frequency (MHz) | Rate | Average | | Peak | | Required Limit |
|---|---|---|---|---|---|---|
| | | dBm | W | dBm | W | |
| 2412 | 1 | 11.01 | 0.013 | 14.85 | 0.031 | < 1W |
| 2437 | 1 | 9.98 | 0.010 | 13.30 | 0.021 | < 1W |
| 2462 | 1 | 8.04 | 0.006 | 12.19 | 0.017 | < 1W |
| 2412 | 11 | 10.96 | 0.012 | 14.09 | 0.026 | < 1W |
| 2437 | 11 | 9.53 | 0.009 | 12.94 | 0.020 | < 1W |
| 2462 | 11 | 7.66 | 0.006 | 11.83 | 0.015 | < 1W |

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11g Link Mode

Test Date : 09/04/2009

| Frequency (MHz) | Rate | Average | | Peak | | Required Limit |
|---|---|---|---|---|---|---|
| | | dBm | W | dBm | W | |
| 2412 | 6 | 10.09 | 0.010 | 18.82 | 0.076 | < 1W |
| 2437 | 6 | 9.20 | 0.008 | 17.95 | 0.062 | < 1W |
| 2462 | 6 | 7.76 | 0.006 | 17.04 | 0.051 | < 1W |
| 2412 | 54 | 8.12 | 0.006 | 17.04 | 0.051 | < 1W |
| 2437 | 54 | 7.77 | 0.006 | 16.73 | 0.047 | < 1W |
| 2462 | 54 | 6.05 | 0.004 | 15.95 | 0.039 | < 1W |

# 5. Minimum 6dB RF Bandwidth Requirements

## 5.1 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A peak output reading was taken, a DISPLAY line was drawn 6 dB lower than peak level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line.

The test was performed at 3 channels (Channel 1, 6, 11)

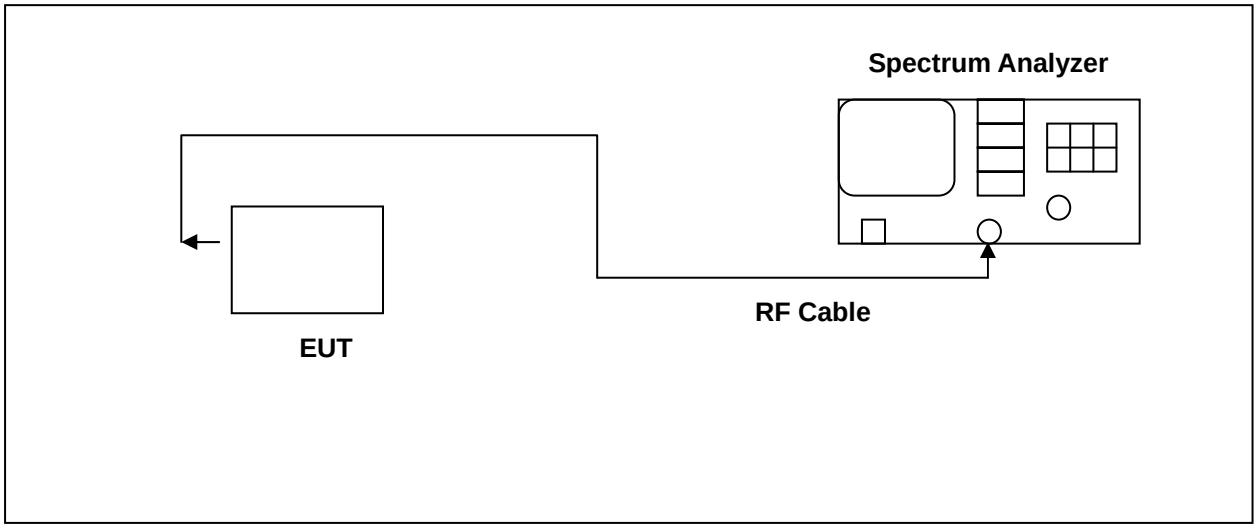
## 5.2 Limits

Systems using digital modulation techniques may operate in the 2400–2483.5 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

## 5.3 Test Equipment List

| Describe | Manufacturer | Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Cal. Date | Due Date |
| Spectrum Analyzer | Agilent | E4445A | MY46181986 | May 15, 2009 | May 15, 2010 |

## 5.4 Test Instruments Configuration



## 5.5 Test Result

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11b Link Mode

Test Date : 09/04/2009

| Frequency (MHz) | Min. 6dB Bandwidth (MHz) | Required Limit |
|---|---|---|
| 2412 | 12.375 | > 500 KHz |
| 2437 | 12.000 | > 500 KHz |
| 2462 | 12.250 | > 500 KHz |

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

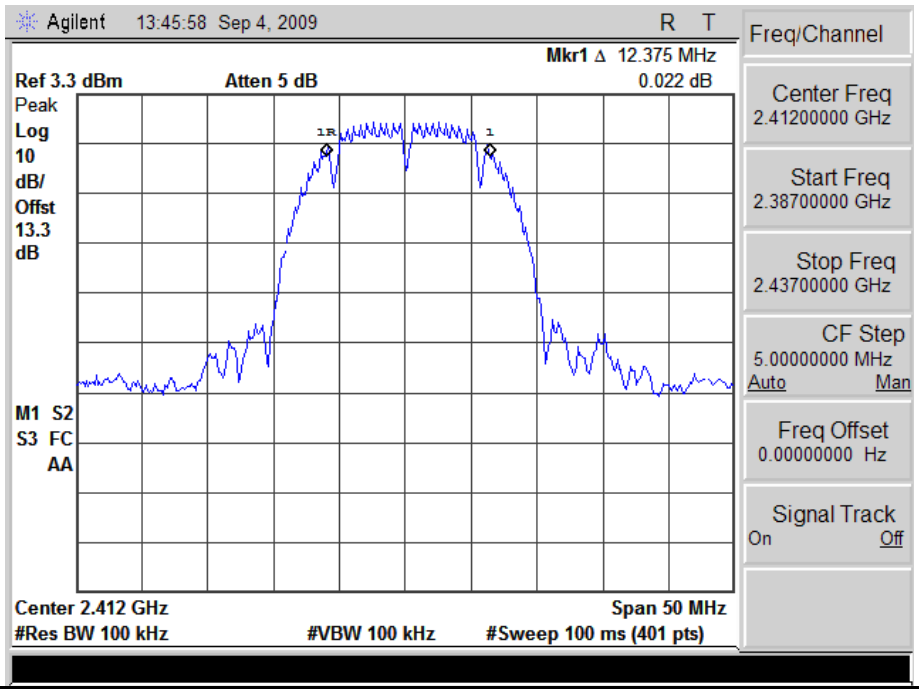
Test Mode : IEEE 802.11g Link Mode

Test Date : 09/04/2009

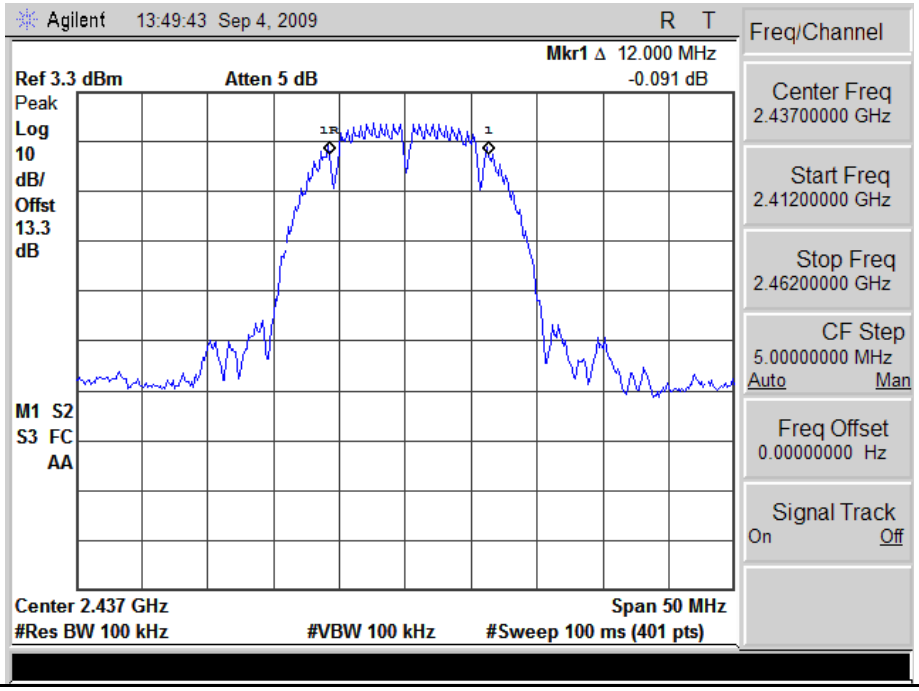
| Frequency (MHz) | Min. 6dB Bandwidth (MHz) | Required Limit |
|---|---|---|
| 2412 | 16.250 | > 500 KHz |
| 2437 | 16.500 | > 500 KHz |
| 2462 | 16.500 | > 500 KHz |

## 5.6 Test Graphs

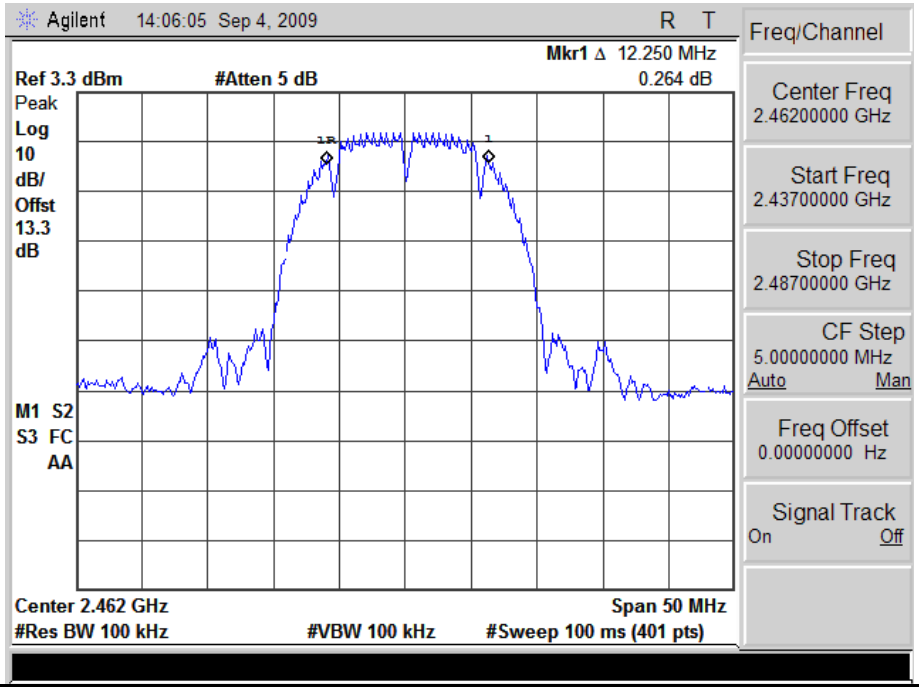
| IEEE 802.11b |
|---|
| 2412MHz |



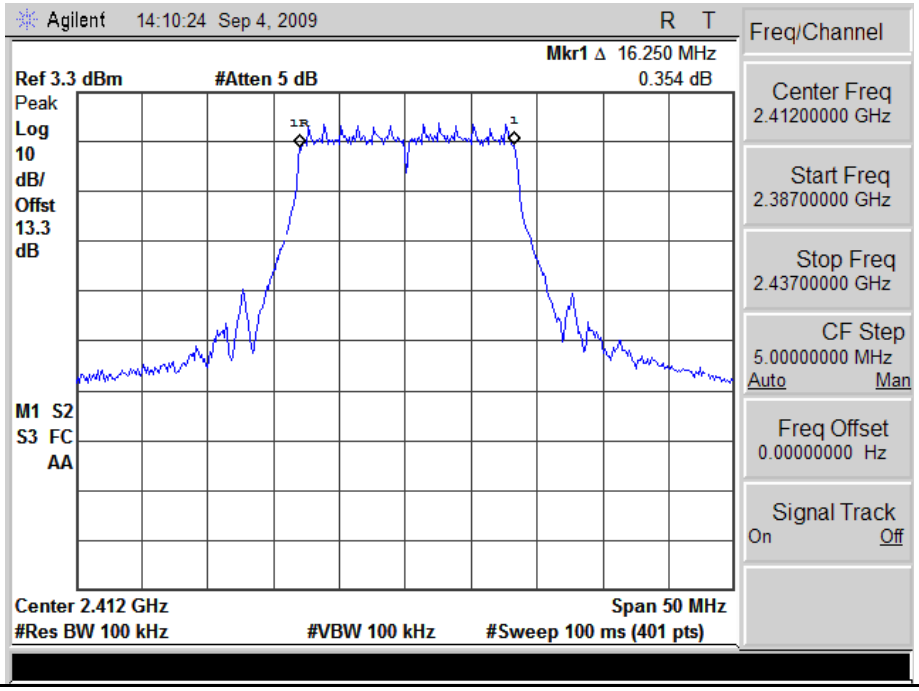

| IEEE 802.11b |
|---|
| 2437MHz |



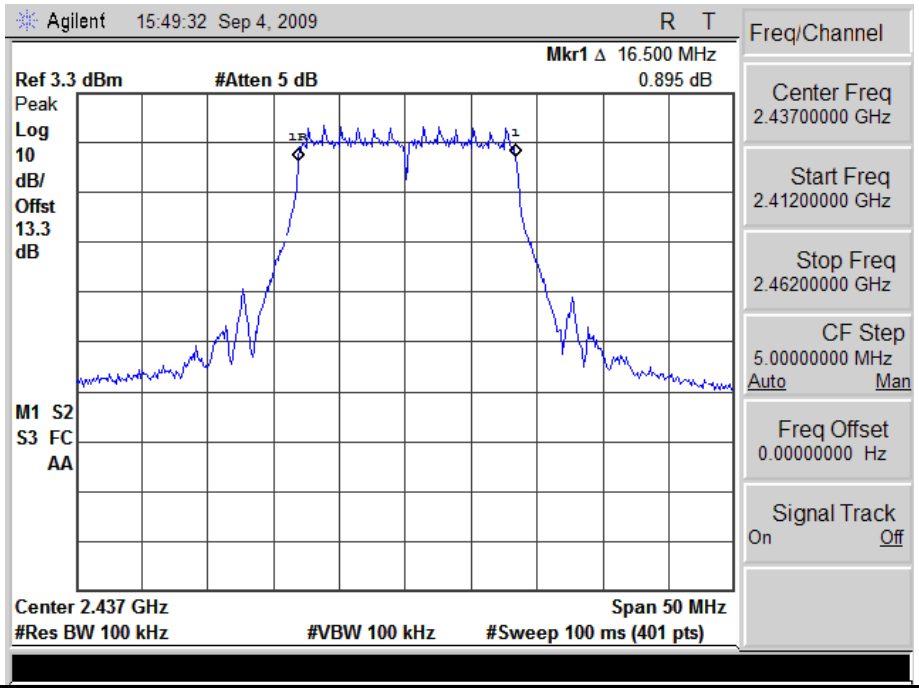
| IEEE 802.11b |
| --- |
| 2462MHz |



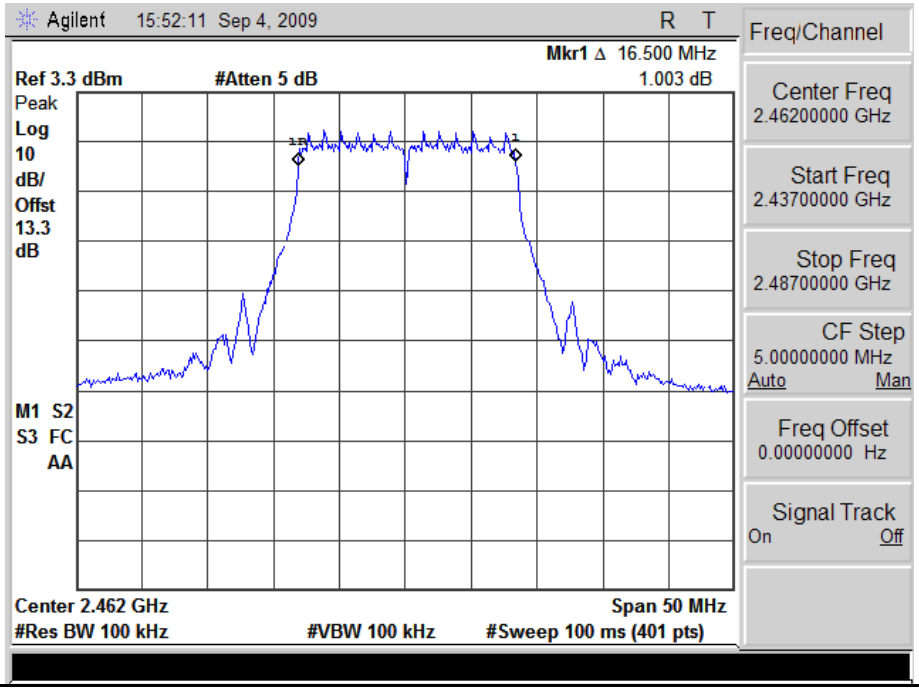
| IEEE 802.11g |
|---|
| 2412MHz |




| IEEE 802.11g |
|---|
| 2437MHz |



| IEEE 802.11g |
| --- |
| 2462MHz |



# 6. Maximum Power Density Requirements

## 6.1 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The spectrum analyzer RES BW was set to 3 kHz. The START and STOP frequencies were set to the band edges of the maximum output pass band. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs. The specification calls for a 1 second interval at each 3 kHz bandwidth; total SWEEP TIME is calculated as follows:

SWEEP TIME (SEC) = (Fstop, kHz - Fstart, kHz)/3 kHz

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

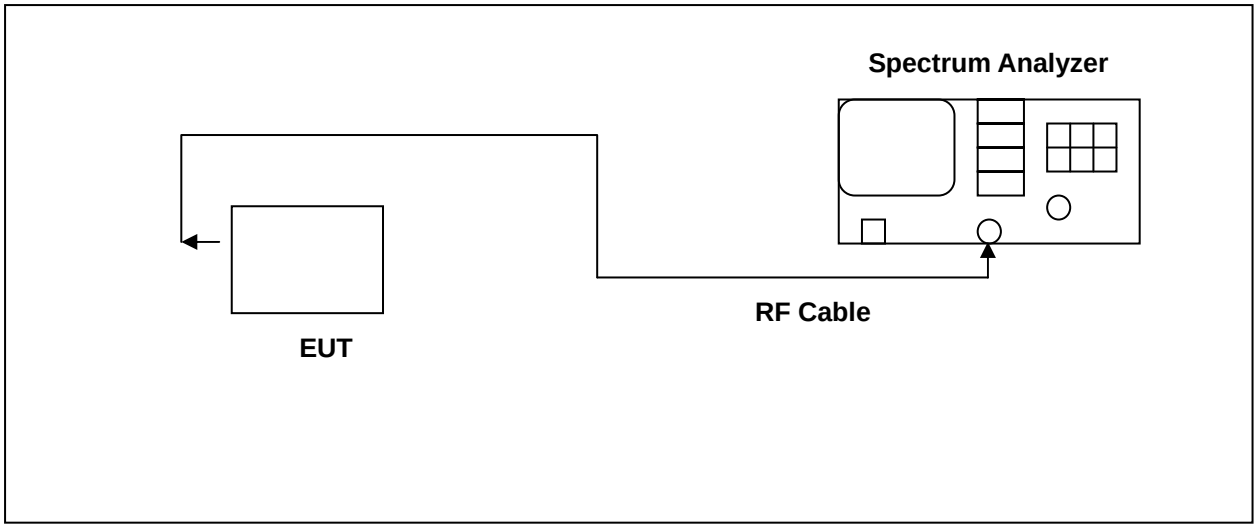
## 6.2 Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

## 6.3 Test Equipment List

| Describe | Manufacturer | Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Cal. Date | Due Date |
| Spectrum Analyzer | Agilent | E4445A | MY46181986 | May 15, 2009 | May 15, 2010 |

## 6.4 Test Instruments Configuration




## 6.5 Test Result

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11b Link Mode

Test Date : 09/07/2009

| Frequency (MHz) | Power Density (dBm) | Required Limit |
|---|---|---|
| 2412 | -18.21 | <8dBm |
| 2437 | -18.92 | <8dBm |
| 2462 | -19.92 | <8dBm |

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11g Link Mode

Test Date : 09/04/2009

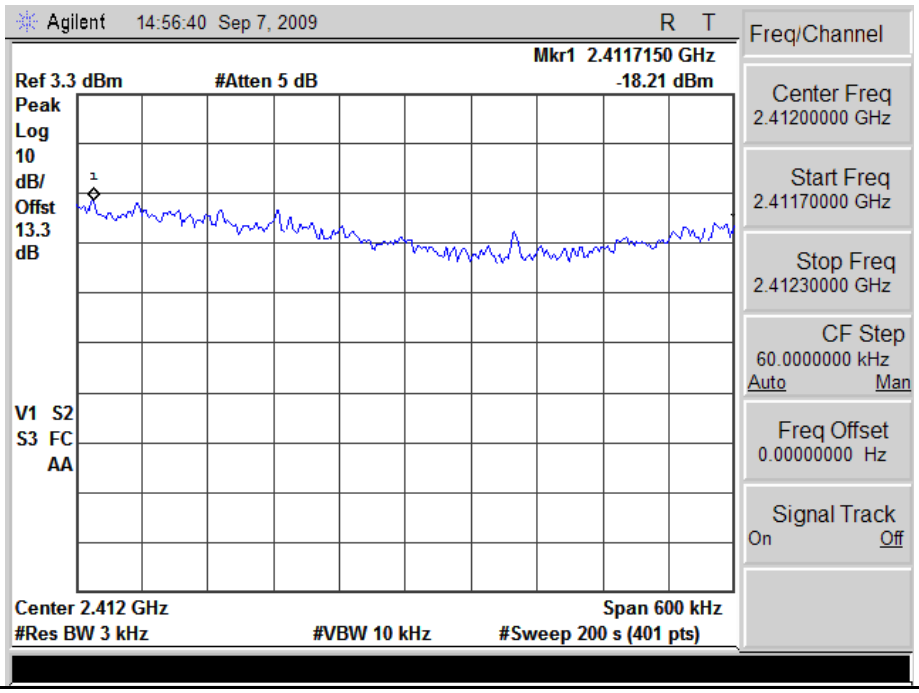
| Frequency (MHz) | Power Density (dBm) | Required Limit |
|---|---|---|
| 2412 | -17.05 | <8dBm |
| 2437 | -17.74 | <8dBm |
| 2462 | -19.16 | <8dBm |

Note:

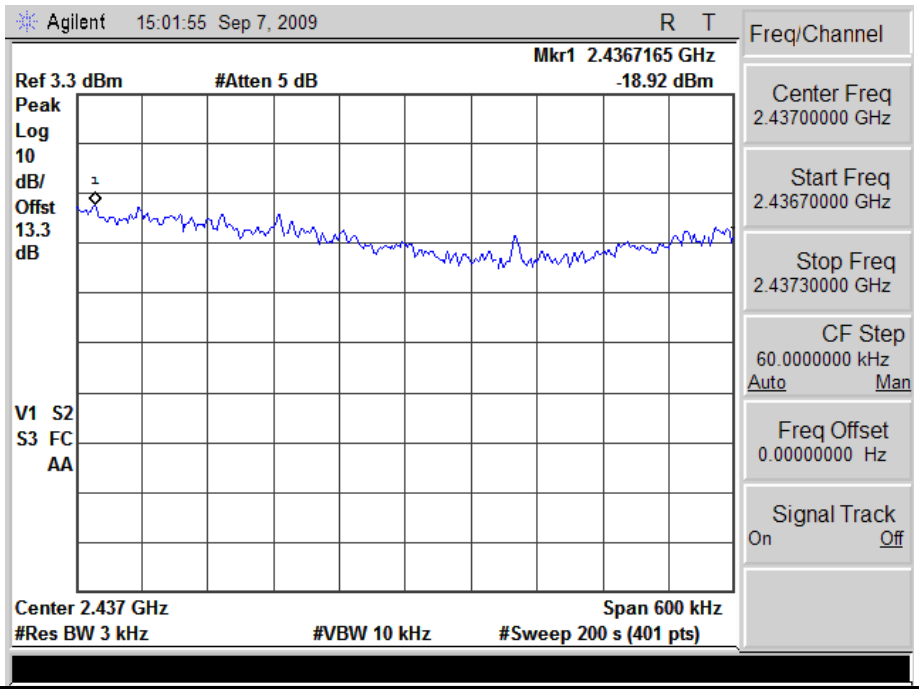
1. Frequency Span= 600 kHz
2. Sweep Time = Frequency Span/3 kHz=200secs
3. Test Graphs See next page.

## 6.6 Test Graphs

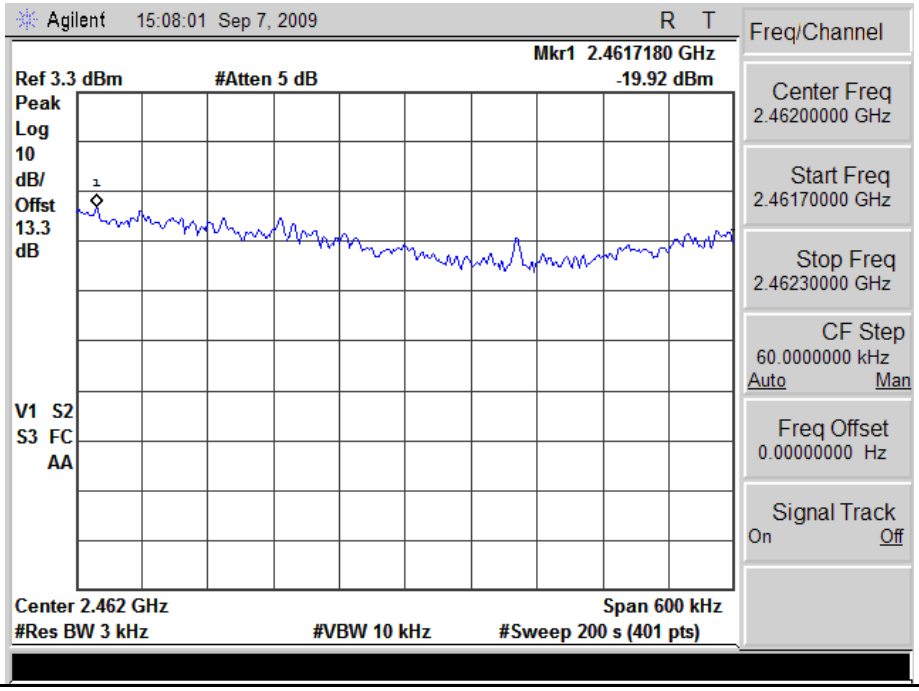
| IEEE 802.11b |
|---|
| 2412MHz |



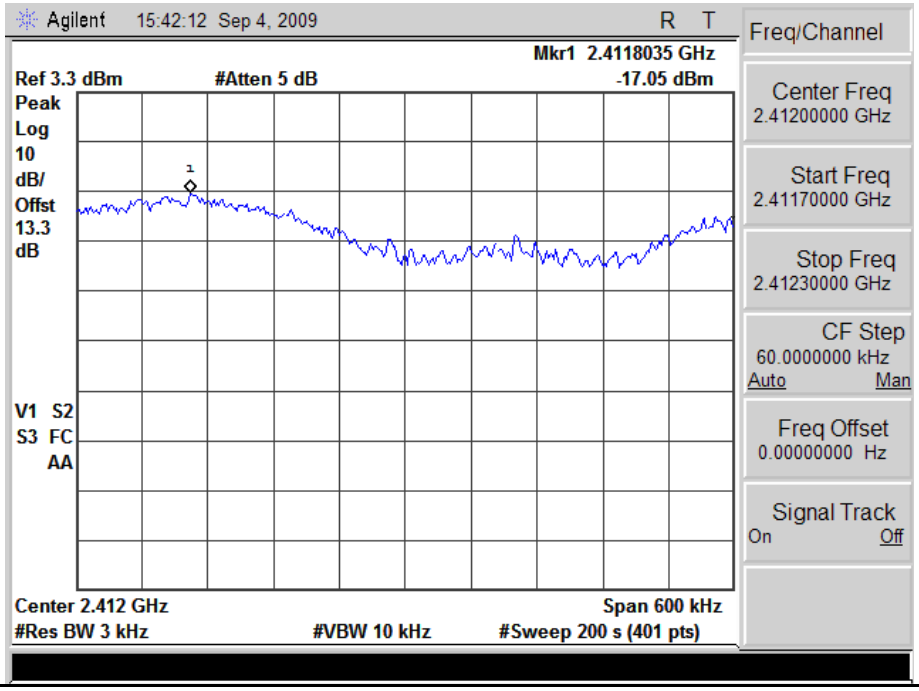

| IEEE 802.11b |
|---|
| 2437MHz |



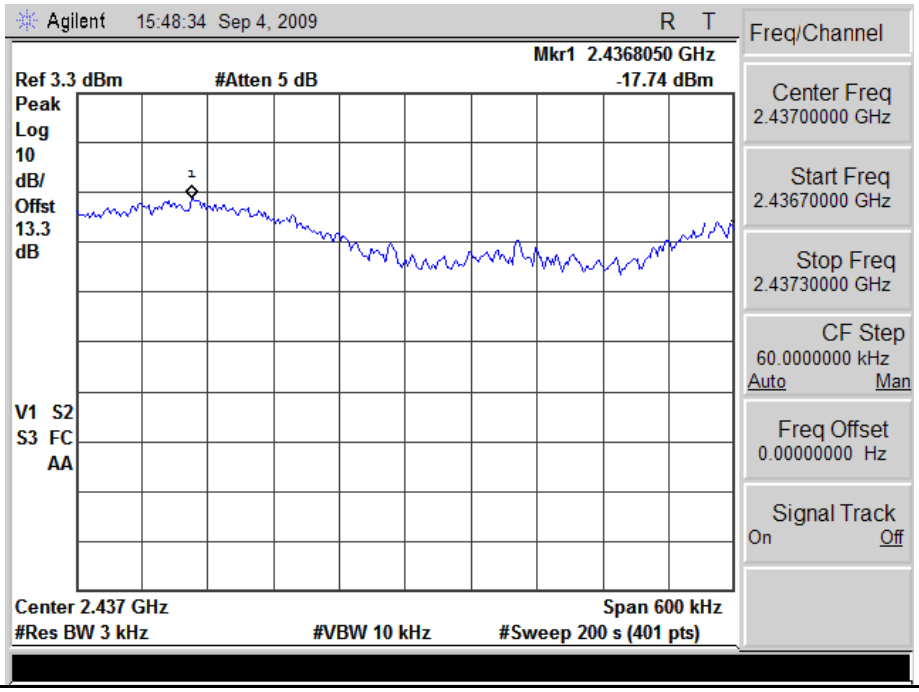
| IEEE 802.11b |
| --- |
| 2462MHz |



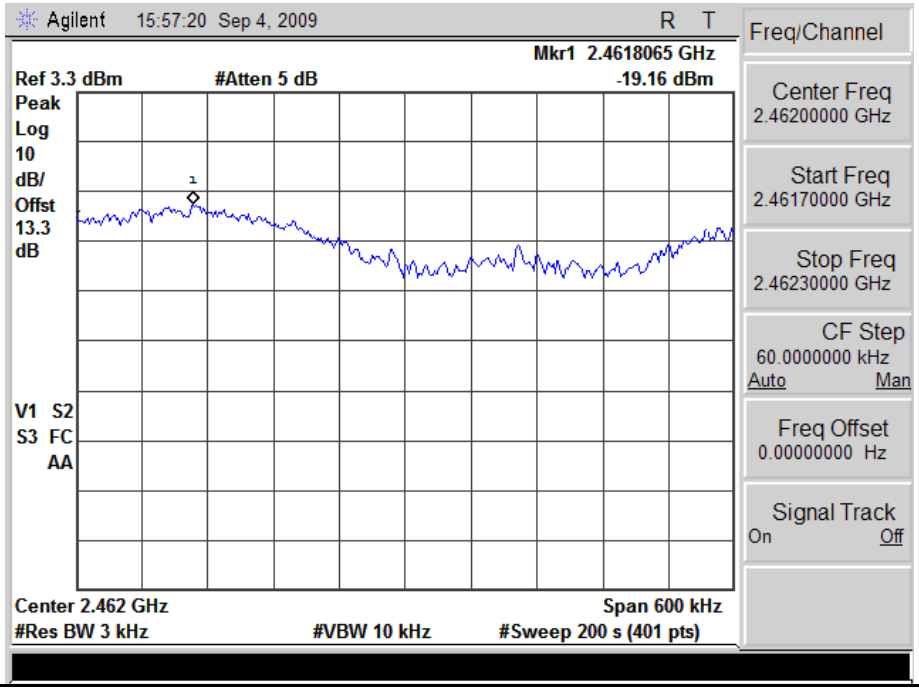
| IEEE 802.11g |
|---|
| 2412MHz |




| IEEE 802.11g |
|---|
| 2437MHz |



| IEEE 802.11g |
| --- |
| 2462MHz |



# 7. Out of Band Conducted Emissions Requirements

## 7.1 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels (Channel 1, 6, 11)

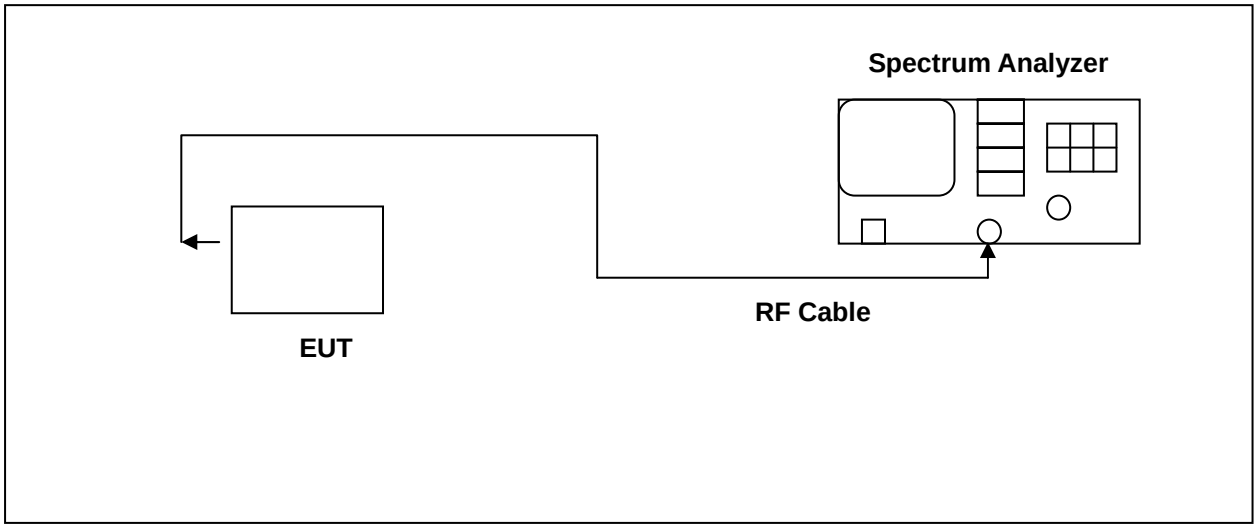
## 7.2 Limits

Refer to attached data sheets. Data shows out of band emissions are suppressed well below the -20 dBc minimum required by the Rules.

## 7.3 Test Equipment List

| Describe | Manufacturer | Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Cal. Date | Due Date |
| Spectrum Analyzer | Agilent | E4445A | MY46181986 | May 15, 2009 | May 15, 2010 |

## 7.4 Test Instruments Configuration



## 7.5 Test Result

EUT : Wireless 802.11b/g ADSL2+ Router

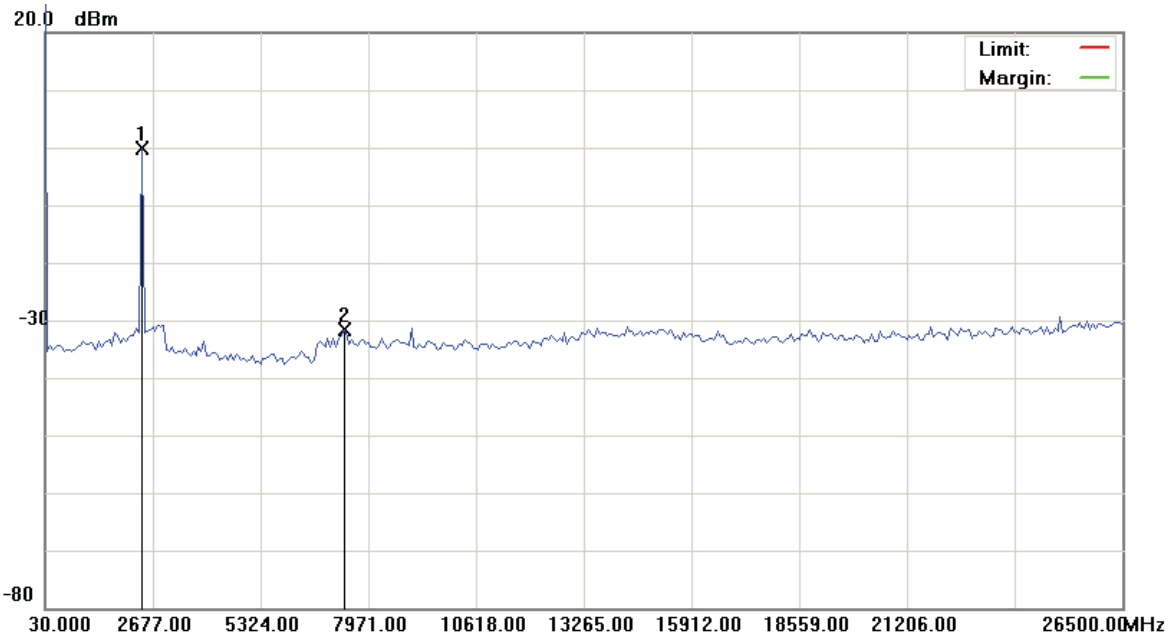
Model No. : TW263R4

Test Mode : IEEE 802.11b Link Mode

Test Date : 09/04/2009

Please refer to next page of detail testing data.

File :20dB(11b) Data :#1 Date: 2009/9/4 Time: 下午 04:21:32




Site: site #1
Limit:
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: 2412

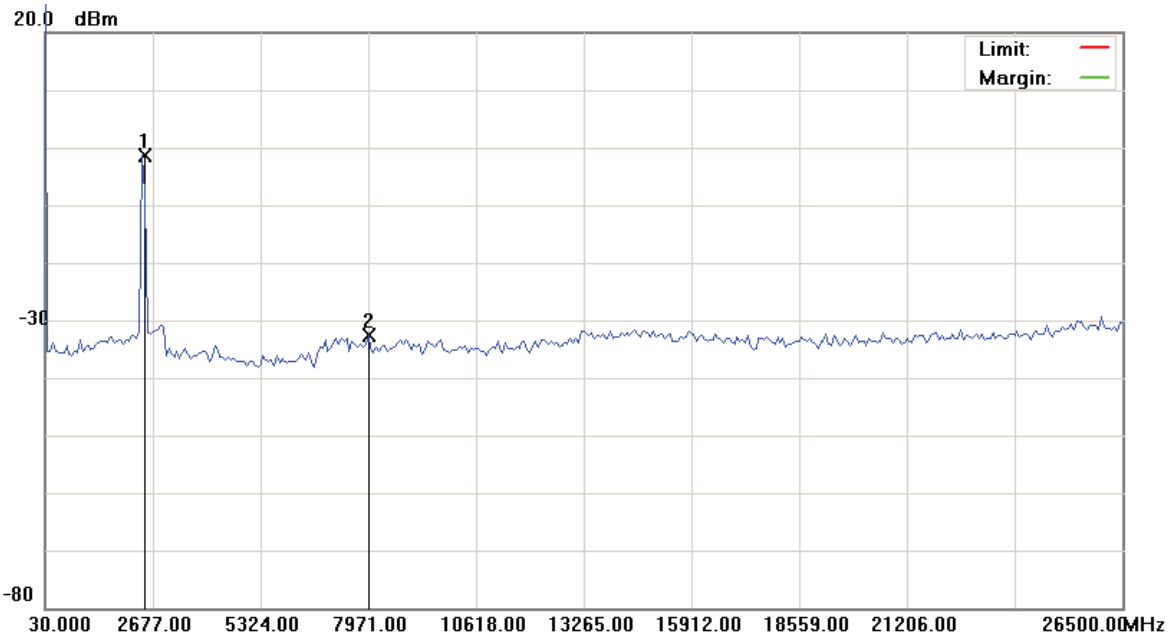
Polarization:
Power: AC 110V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | cm | degree | Comment |
| 1 | * | 2412.300 | -1.21 | 1.00 | -0.21 | | | peak | | | TX |
| 2 | | 7375.425 | -32.70 | 1.00 | -31.70 | | | peak | | | |

*:Maximum data x:Over limit !:over margin

File :20dB(11b) Data :#2 Date: 2009/9/4 Time: 下午 04:23:29




Site: site #1
Limit:
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: 2437

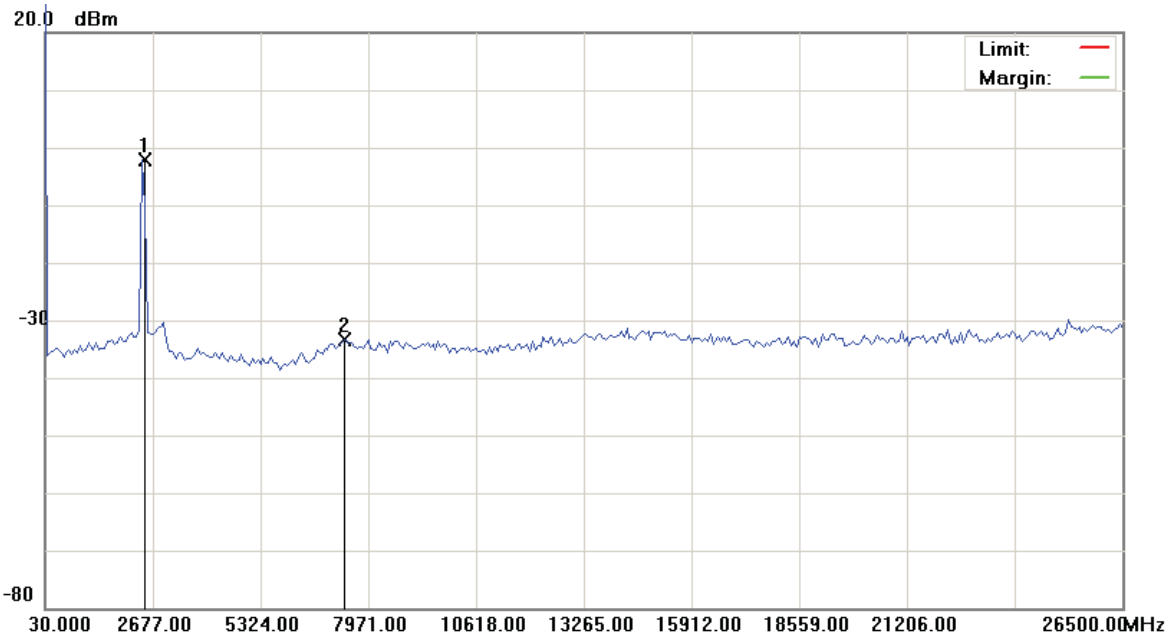
Polarization:
Power: AC 110V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | cm | degree | Comment |
| 1 | * | 2437.000 | -2.42 | 1.00 | -1.42 | | | peak | | | TX |
| 2 | | 7971.000 | -33.52 | 1.00 | -32.52 | | | peak | | | |

*:Maximum data x:Over limit !:over margin

File :20dB(11b) Data :#3 Date: 2009/9/4 Time: 下午 04:23:48




Site: site #1
Limit:
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11b Link Mode
Note: 2462

Polarization:
Power: AC 110V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | cm | degree | Comment |
| 1 | * | 2462.000 | -3.03 | 1.00 | -2.03 | | | peak | | | TX |
| 2 | | 7375.425 | -34.27 | 1.00 | -33.27 | | | peak | | | |

*:Maximum data x:Over limit !:over margin

EUT : Wireless 802.11b/g ADSL2+ Router

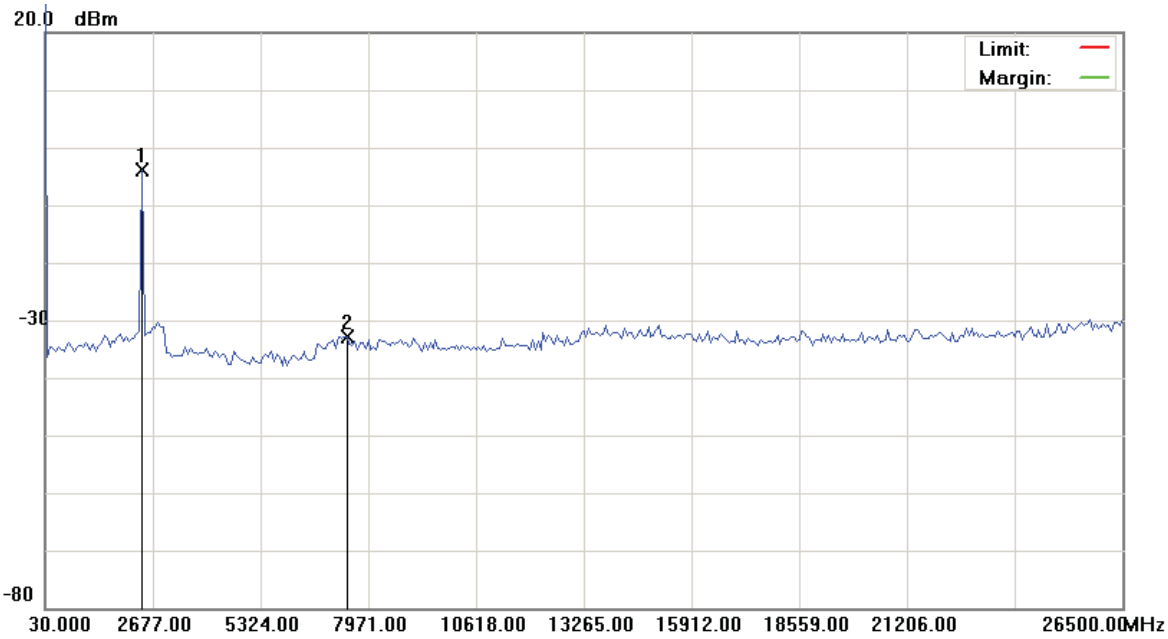
Model No. : TW263R4

Test Mode : IEEE 802.11g Link Mode

Test Date : 09/04/2009

Please refer to next page of detail testing data.

File :20dB(11g) Data :#1 Date: 2009/9/4 Time: 下午 04:16:53




Site: site #1
Limit:
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: 2412

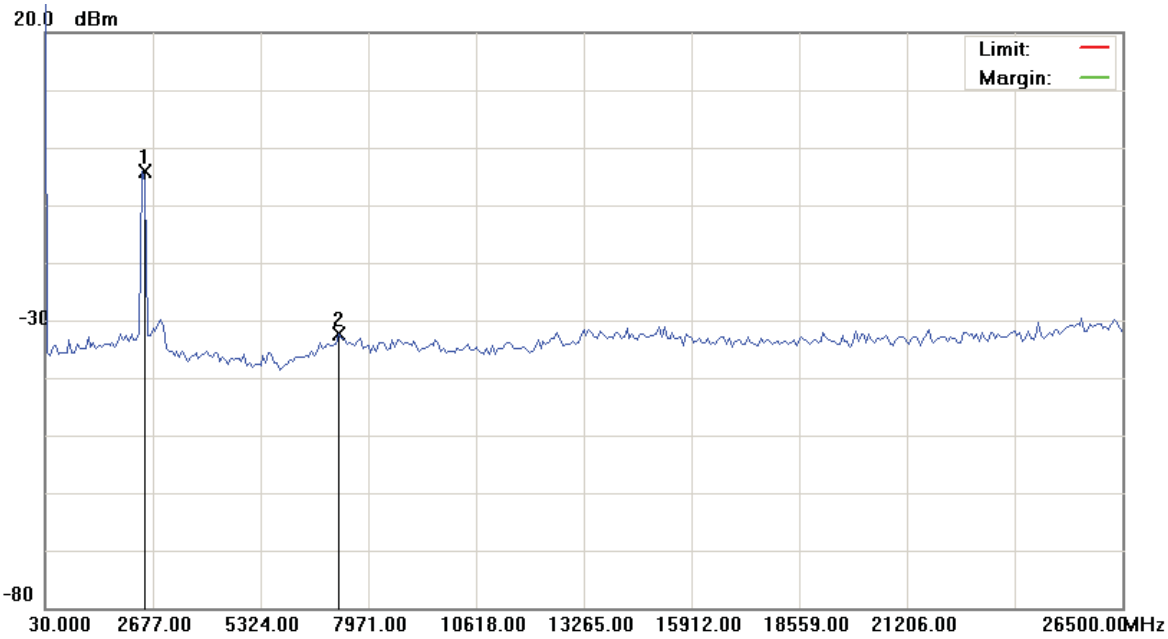
Polarization:
Power: AC 110V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | cm | degree | Comment |
| 1 | * | 2412.300 | -4.76 | 1.00 | -3.76 | | | peak | | | TX |
| 2 | | 7441.600 | -33.84 | 1.00 | -32.84 | | | peak | | | |

*:Maximum data x:Over limit !:over margin

File :20dB(11g) Data :#2 Date: 2009/9/4 Time: 下午 04:18:40




Site: site #1
Limit:
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: 2437

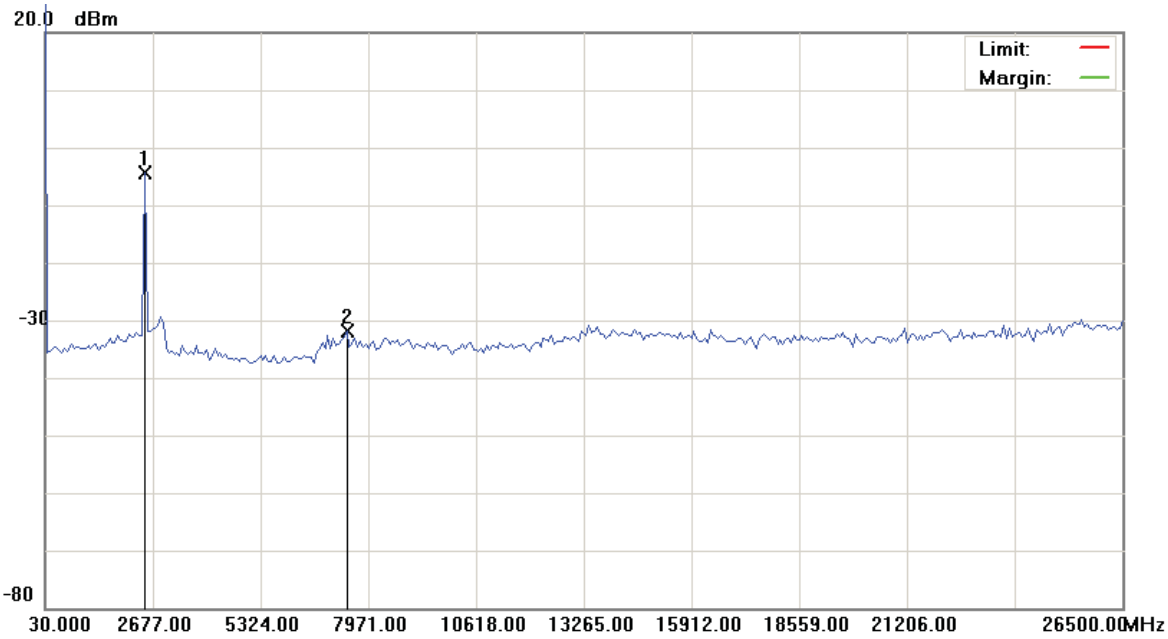
Polarization:
Power: AC 110V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | cm | degree | Comment |
| 1 | * | 2437.000 | -5.15 | 1.00 | -4.15 | | | peak | | | TX |
| 2 | | 7243.075 | -33.40 | 1.00 | -32.40 | | | peak | | | |

*:Maximum data x:Over limit !:over margin

File :20dB(11g) Data :#3 Date: 2009/9/4 Time: 下午 04:13:10




Site: site #1
Limit:
EUT:
M/N: 09-0216-EP
Mode: IEEE 802.11g Link Mode
Note: 2462

Polarization:
Power: AC 110V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | cm | degree | Comment |
| 1 | * | 2462.000 | -5.39 | 1.00 | -4.39 | | | peak | | | TX |
| 2 | | 7441.600 | -32.94 | 1.00 | -31.94 | | | peak | | | |

*:Maximum data x:Over limit !:over margin

# 8. Band Edges Requirements

## 8.1 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.

The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.

The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.

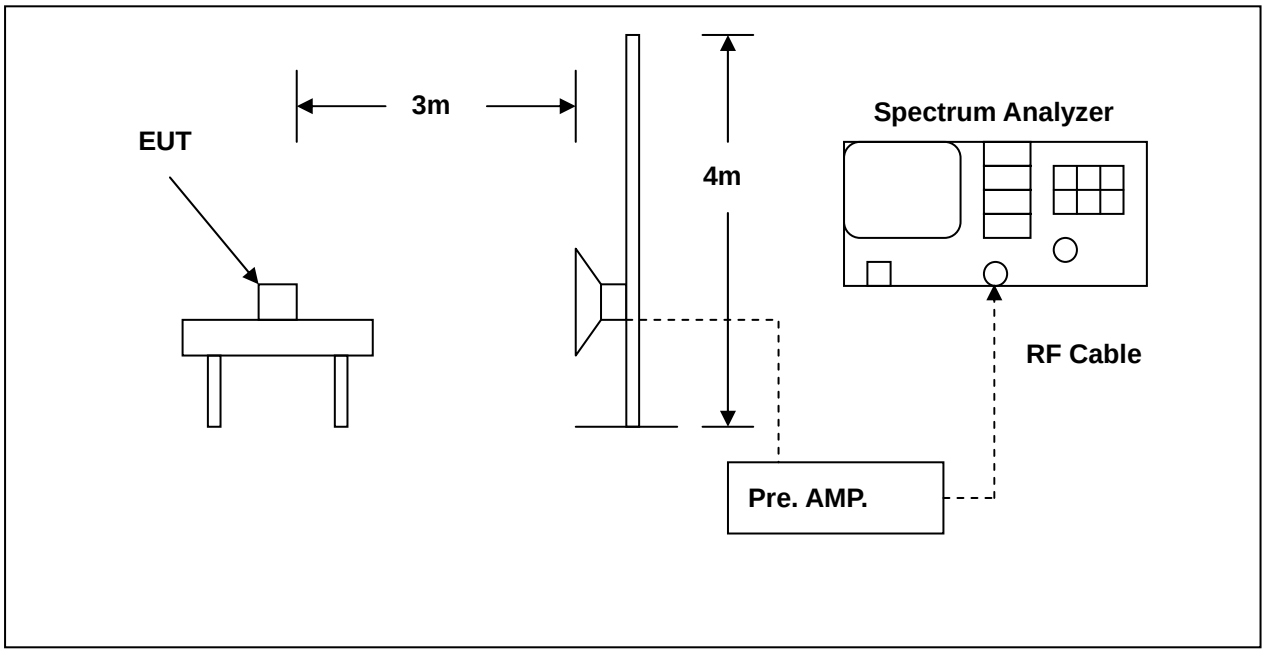
## 8.2 Limits

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

## 8.3 Test Equipment List

| Describe | Manufacturer | Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Cal. Date | Due Date |
| Spectrum Analyzer | Agilent | E4408B | MY45107753 | Jun. 08, 2009 | Jun. 08, 2010 |
| Pre Amplifier | Agilent | 8449B | 3008A02237 | Jun. 08, 2009 | Jun. 08, 2010 |
| Horn Antenna | SCHWARZBECK MESS-ELEKTRONIK | BBHA9120D | 9120D-550 | Jul. 01, 2009 | Jul. 01, 2010 |

## 8.4 Test Instruments Configuration




## 8.5 Test Result

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11b Link Mode Low CH & High CH

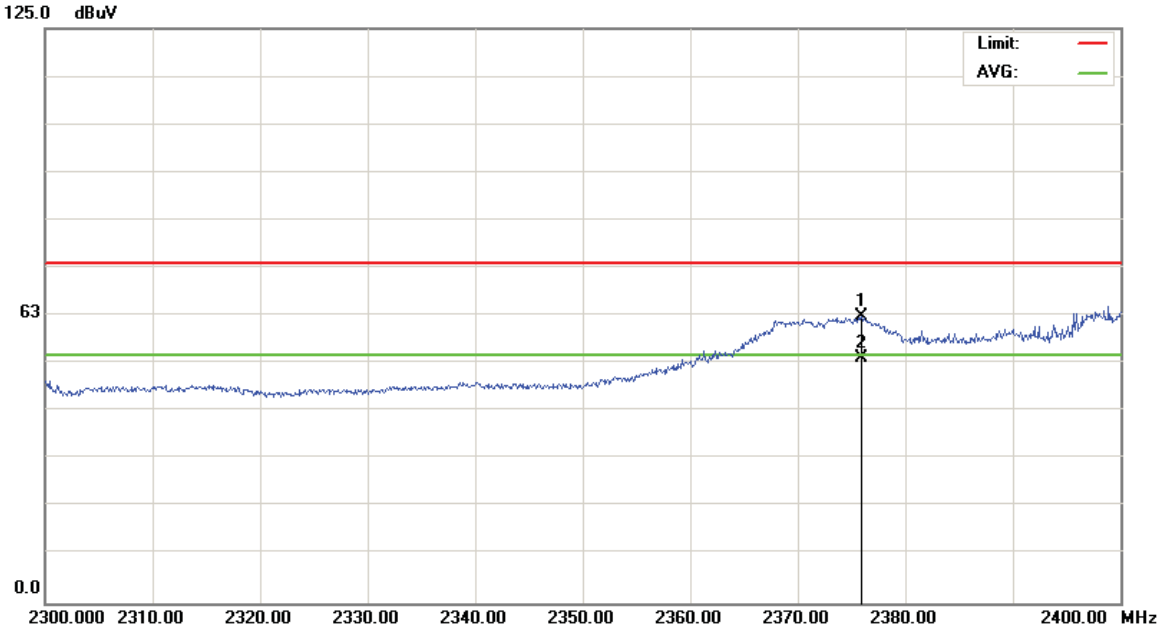
Test Date : 09/07/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Height of table for EUT placed: 0.8 Meter.
3. ANT= Antenna height.
4. Duty= Duty cycle correction factor.
5. Dis= Distance extrapolation factor.
6. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor
   (Auto calculate in spectrum analyzer)
7. Actual Amp= Amplitude – Duty – Dis.

File :FCC(BAND EDGE) power 5 Data :#1 Date: 2009/9/7 Time: 下午 12:09:41

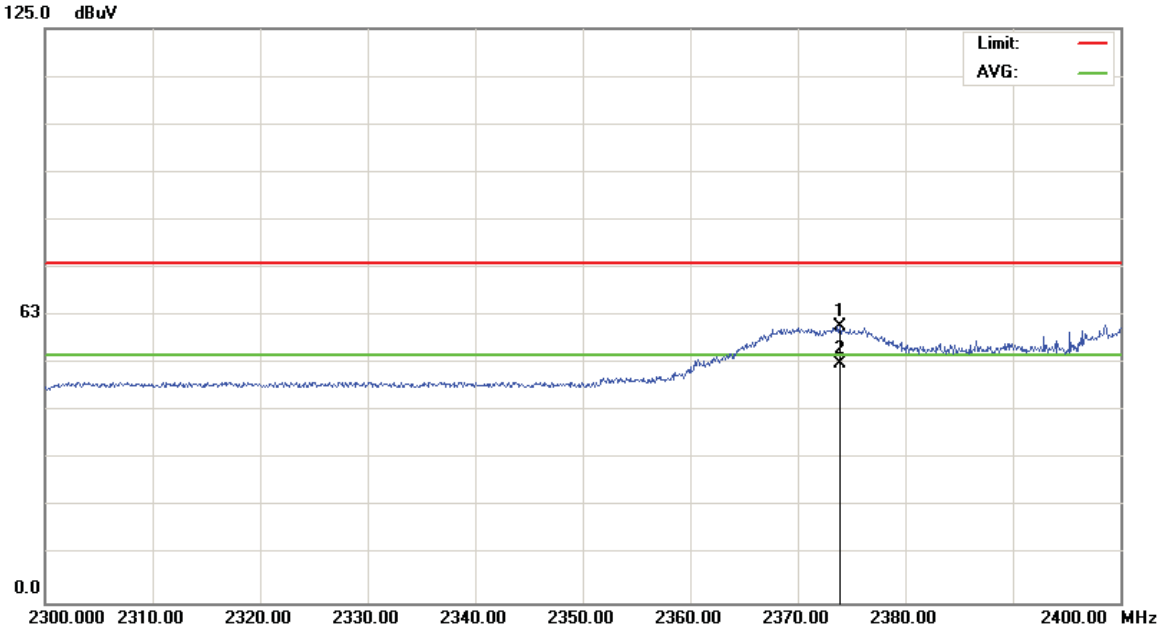



| | | |
|---|---|---|
| Site | Polarization: ***Vertical*** | Temperature: 22 ℃ |
| Limit: FCC part 15 (PK) | Power: | Humidity: 60 % |
| EUT: | Distance: 3m | |
| M/N: 09-0216-EP | | |
| Mode: BAND EDGE(11b) | | |
| Note: CH01(2412MHz) | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2375.900 | 62.04 | 0.16 | 62.20 | 74.00 | -11.80 | peak | | | |
| 2 | * | 2375.900 | 53.00 | 0.16 | 53.16 | 54.00 | -0.84 | AVG | | | |

*:Maximum data x:Over limit !:over margin ●Reference Only

File :FCC(BAND EDGE) power 5 Data :#5 Date: 2009/9/7 Time: 下午 12:13:16




Site
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: BAND EDGE(11b)
Note: CH01(2412MHz)

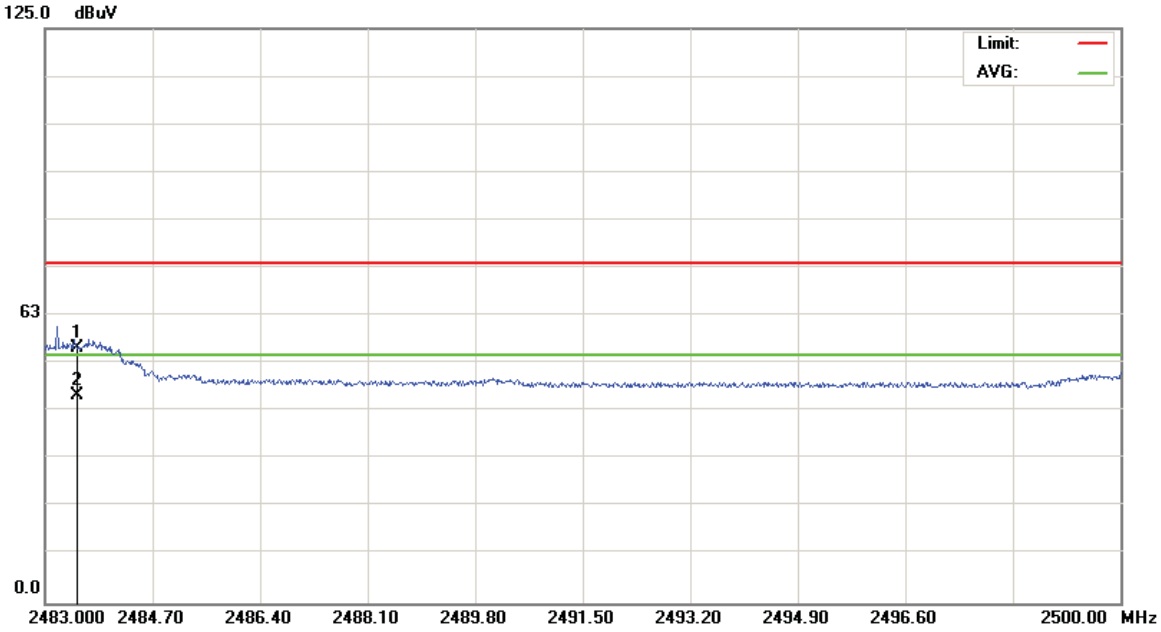
Polarization: ***Horizontal***
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2373.900 | 59.95 | 0.17 | 60.12 | 74.00 | -13.88 | peak | | | |
| 2 | * | 2373.900 | 51.95 | 0.17 | 52.12 | 54.00 | -1.88 | AVG | | | |

*:Maximum data x:Over limit !:over margin ●Reference Only

File :FCC(BAND EDGE) power 5 Data :#3 Date: 2009/9/7 Time: 下午 12:23:15




Site
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: BAND EDGE(11b)
Note: CH11(2462MHz)

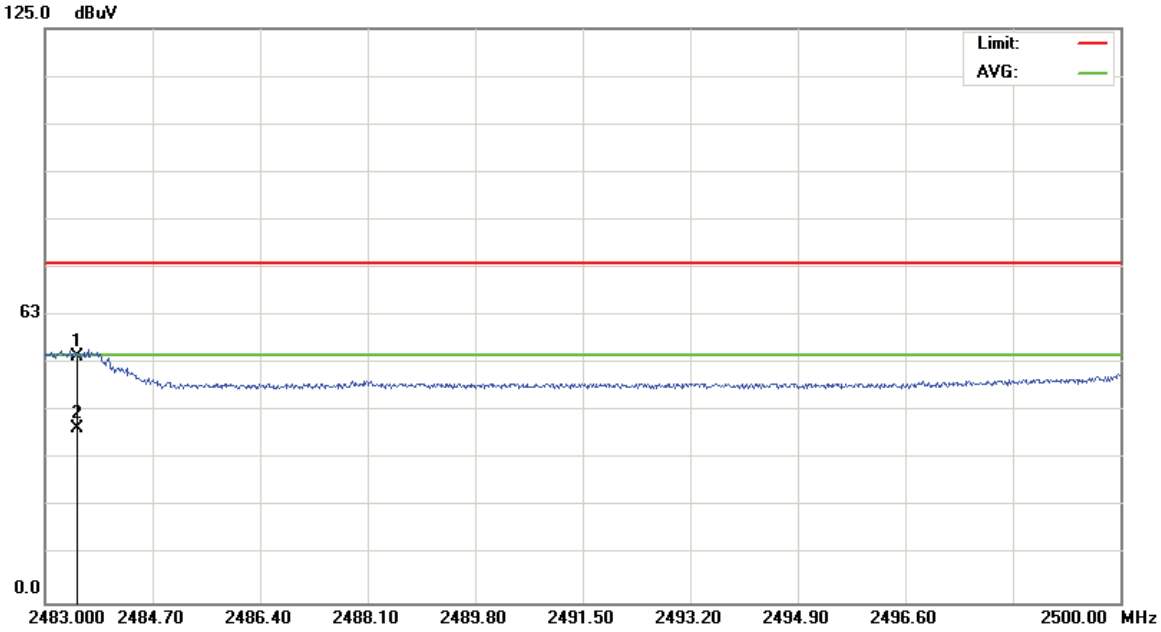
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2483.500 | 55.07 | 0.25 | 55.32 | 74.00 | -18.68 | peak | | | |
| 2 | * | 2483.500 | 44.86 | 0.25 | 45.11 | 54.00 | -8.89 | AVG | | | |

*:Maximum data x:Over limit !:over margin ●Reference Only

File :FCC(BAND EDGE) power 5 Data :#7 Date: 2009/9/7 Time: 下午 12:19:53




Site
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: BAND EDGE(11b)
Note: CH11(2462MHz)

Polarization: ***Horizontal***
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2483.500 | 53.37 | 0.25 | 53.62 | 74.00 | -20.38 | peak | | | |
| 2 | * | 2483.500 | 37.58 | 0.25 | 37.83 | 54.00 | -16.17 | AVG | | | |

*:Maximum data x:Over limit !:over margin ●Reference Only

EUT : Wireless 802.11b/g ADSL2+ Router

Model No. : TW263R4

Test Mode : IEEE 802.11g Link Mode Low CH & High CH

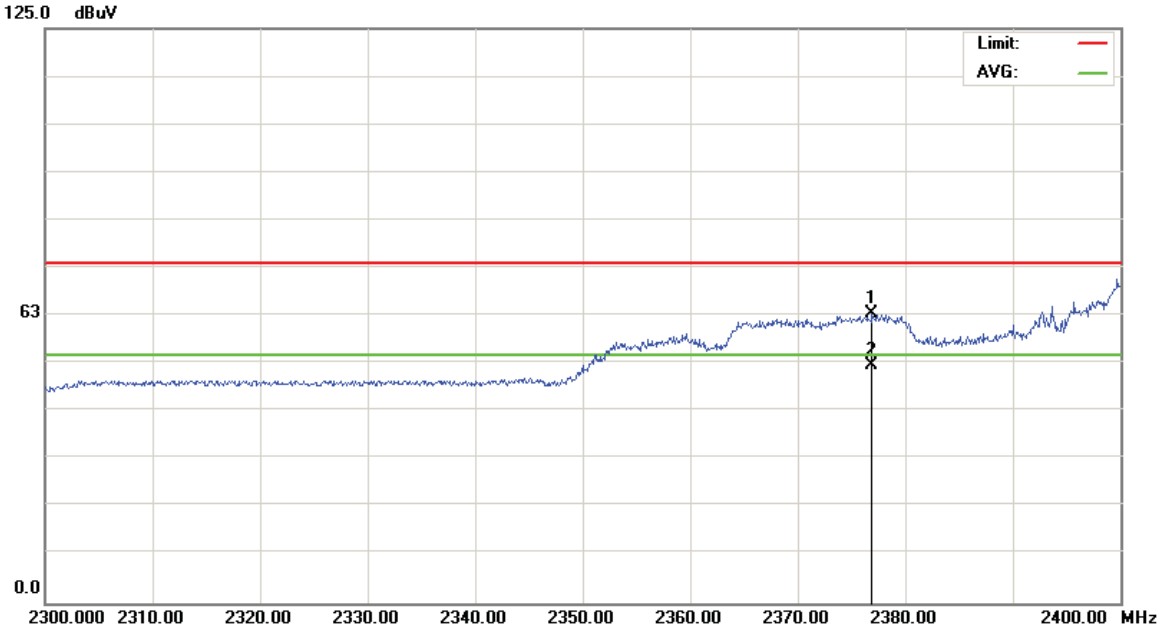
Test Date : 09/07/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Height of table for EUT placed: 0.8 Meter.
3. ANT= Antenna height.
4. Duty= Duty cycle correction factor.
5. Dis= Distance extrapolation factor.
6. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor
   (Auto calculate in spectrum analyzer)
7. Actual Amp= Amplitude – Duty – Dis.

File :FCC(BAND EDGE)power 10 Data :#1 Date: 2009/9/7 Time: 下午 01:42:22

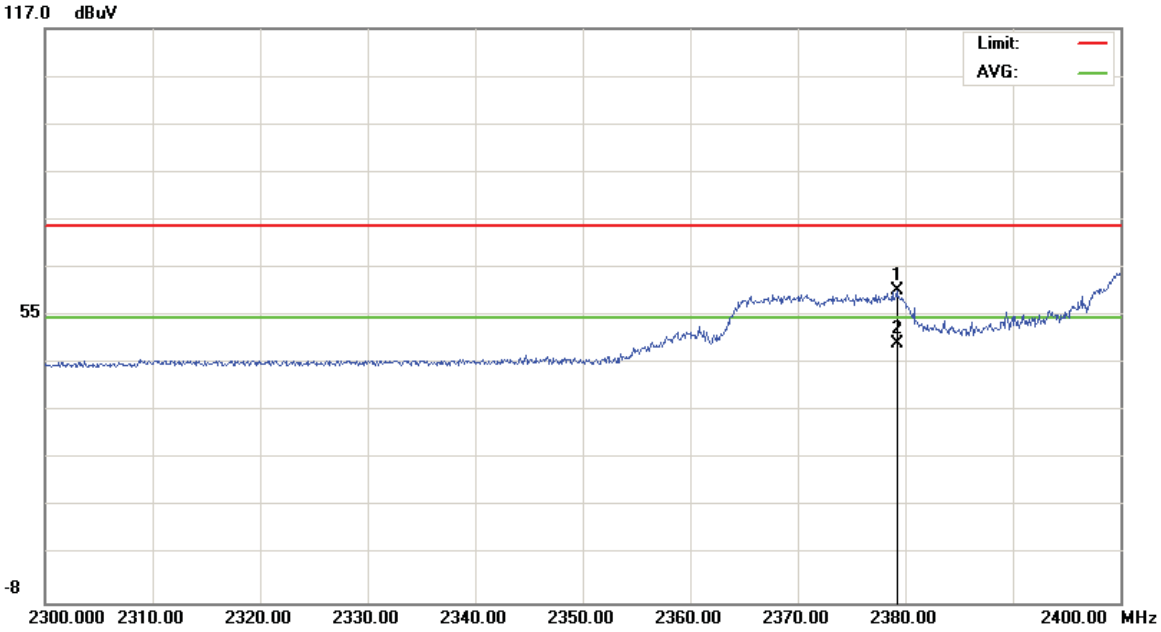



| | | |
|---|---|---|
| Site | Polarization: ***Vertical*** | Temperature: 22 ℃ |
| Limit: FCC part 15 (PK) | Power: | Humidity: 60 % |
| EUT: | Distance: 3m | |
| M/N: 09-0216-EP | | |
| Mode: BAND EDGE(11g) | | |
| Note: CH01(2412MHz) | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2376.900 | 62.93 | 0.16 | 63.09 | 74.00 | -10.91 | peak | | | |
| 2 | * | 2376.900 | 51.48 | 0.16 | 51.64 | 54.00 | -2.36 | AVG | | | |

*:Maximum data x:Over limit !:over margin ●Reference Only

File :FCC(BAND EDGE)power 10 Data :#5 Date: 2009/9/7 Time: 下午 01:48:26




Site
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: BAND EDGE(11g)
Note: CH01(2412MHz)

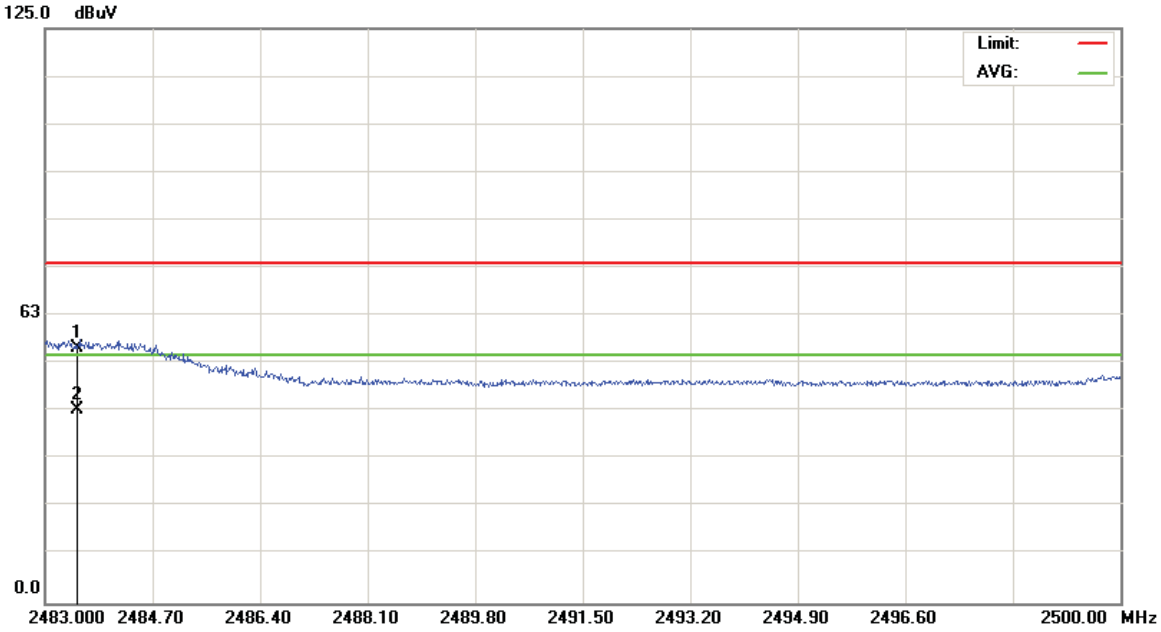
Polarization: ***Horizontal***
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2379.200 | 59.90 | 0.17 | 60.07 | 74.00 | -13.93 | peak | | | |
| 2 | * | 2379.200 | 48.16 | 0.17 | 48.33 | 54.00 | -5.67 | AVG | | | |

*:Maximum data x:Over limit !:over margin ●Reference Only

File :FCC(BAND EDGE)power 10 Data :#3 Date: 2009/9/7 Time: 下午 01:57:01




Site
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: BAND EDGE(11g)
Note: CH11(2462MHz)

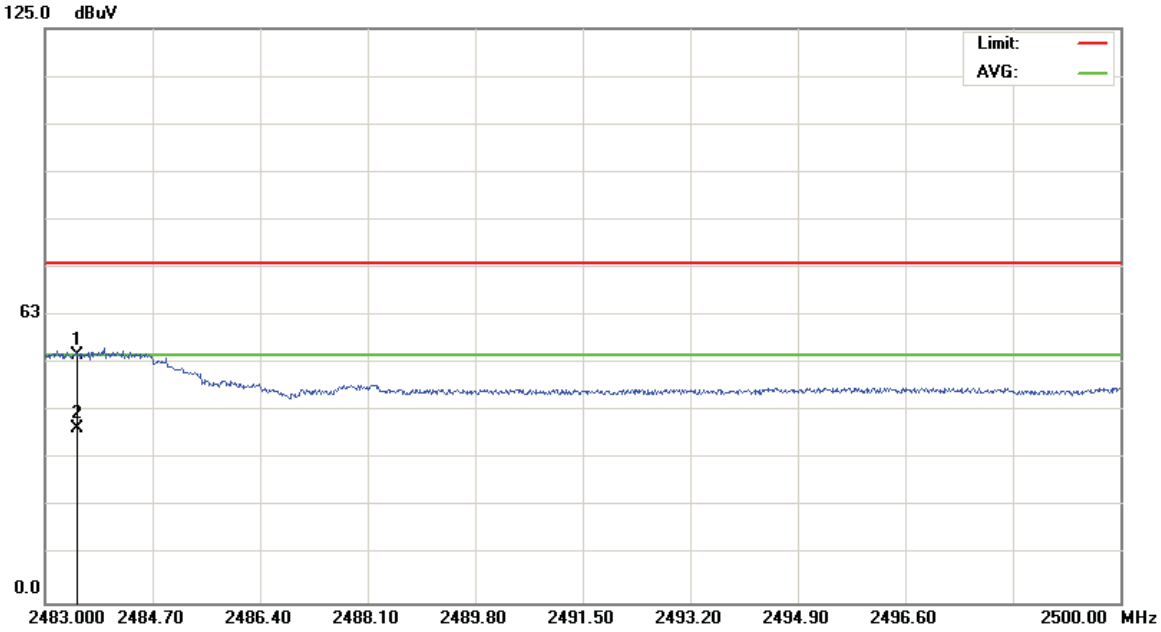
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2483.500 | 55.14 | 0.25 | 55.39 | 74.00 | -18.61 | peak | | | |
| 2 | * | 2483.500 | 41.92 | 0.25 | 42.17 | 54.00 | -11.83 | AVG | | | |

*:Maximum data x:Over limit !:over margin ●Reference Only

File :FCC(BAND EDGE)power 10 Data :#7 Date: 2009/9/7 Time: 下午 01:54:00




Site
Limit: FCC part 15 (PK)
EUT:
M/N: 09-0216-EP
Mode: BAND EDGE(11g)
Note: CH11(2462MHz)

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22 ℃
Humidity: 60 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | cm | degree | Comment |
| 1 | | 2483.500 | 53.70 | 0.25 | 53.95 | 74.00 | -20.05 | peak | | | |
| 2 | * | 2483.500 | 37.83 | 0.25 | 38.08 | 54.00 | -15.92 | AVG | | | |

*:Maximum data x:Over limit !:over margin ●Reference Only

# 9. Antenna Requirements

## 9.1 Standard Applicable

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

## 9.2 Antenna Connector Construction

The antenna used in this product is **External Antenna**. And the maximum Gain of this antenna is only **3 .5dBi**.