



## Test Report

|              |                                    |
|--------------|------------------------------------|
| Product Name | Wireless Thin Client               |
| Model No.    | TX-3000***** (*=0~9, A~Z or blank) |
| FCC ID       | BJM-TX30001                        |

|           |                                                            |
|-----------|------------------------------------------------------------|
| Applicant | TATUNG CO.                                                 |
| Address   | 22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C. |

|                 |                        |
|-----------------|------------------------|
| Date of Receipt | Dec. 12, 2006          |
| Issued Date     | Dec. 25, 2006          |
| Report No.      | 069L032-RF-US-P18V02-1 |

The test results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

# Test Report Certification

Issued Date: Dec. 25, 2006

Report No.: 069L032-RF-US-P18V02-1



Accredited by NIST (NVLAP)

NVLAP Lab Code: 200533-0

|                     |                                                                                |
|---------------------|--------------------------------------------------------------------------------|
| Product Name        | Wireless Thin Client                                                           |
| Applicant           | TATUNG CO.                                                                     |
| Address             | 22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.                     |
| Manufacturer        | TATUNG CO.                                                                     |
| Model No.           | TX-3000**** (*=0~9, A~Z or blank)                                              |
| Rated Voltage       | AC 120V/60Hz                                                                   |
| Working Voltage     | AC 120V/60Hz                                                                   |
| Trade Name          | TATUNG                                                                         |
| Applicable Standard | FCC CFR Title 47 Part 15 Subpart C: 2005<br>CISPR 22: 2005<br>ANSI C63.4: 2003 |
| Test Result         | Complied                                                                       |



Test results relate only to the samples tested.

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Documented By

:



( Michelle Lin )



Tested By

:



( Tom Hsieh )



Approved By

:



( George Chen )

0914

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

## 1. GENERAL INFORMATION

### 1.1. EUT Description

|                    |                                                                                    |
|--------------------|------------------------------------------------------------------------------------|
| Product Name       | Wireless Thin Client                                                               |
| Trade Name         | TATUNG                                                                             |
| Model No.          | TX-3000**** (*=0~9, A~Z or blank)                                                  |
| FCC ID             | BJM-TX30001                                                                        |
| Frequency Range    | 2412 – 2462MHz                                                                     |
| Channel Number     | 11                                                                                 |
| Data Speed         | IEEE 802.11b – 1, 2, 5.5, 11Mbps<br>IEEE 802.11g – 6, 9, 12, 18, 24, 36 48, 54Mbps |
| Type of Modulation | DSSS/OFDM                                                                          |
| Antenna Type       | PIFA                                                                               |
| Antenna Gain       | Refer to the table “Antenna List”                                                  |
| Channel Control    | Auto                                                                               |
| Channel Separation | 5MHz                                                                               |

|                   |                                      |
|-------------------|--------------------------------------|
| Component List:   |                                      |
| Main Board        | TX-3000                              |
| CPU               | AMD Geode LX-800 GX-MMX 500MHz       |
| Memory            | UNIGEN UG032D6688LM-GJF DDR400 256MB |
| Adapter           | UMEC UP0501Q-16P                     |
| Battery Pack      | GLW WP-B24                           |
| CF Card           | PQI AC60-1030R044 1GB                |
| Wireless LAN Card | Qcom, Q802MKG2 802.11b/g             |
| Touch Panel       | e-Turbo1 S4-1104009FA                |
| Panel             | Toshiba LTD10KA1S                    |

#### Antenna List

| No. | Manufacturer | Part No. | Peak Gain            |
|-----|--------------|----------|----------------------|
| 1   | TATUNG       | TX-3000  | -1.42dBi for 2.4 GHz |

#### Frequency of Each Channel:

| Channel    | Frequency | Channel    | Frequency | Channel     | Frequency |
|------------|-----------|------------|-----------|-------------|-----------|
| Channel 1: | 2412 MHz  | Channel 5: | 2432 MHz  | Channel 9:  | 2452 MHz  |
| Channel 2: | 2417 MHz  | Channel 6: | 2437 MHz  | Channel 10: | 2457 MHz  |
| Channel 3: | 2422 MHz  | Channel 7: | 2442 MHz  | Channel 11: | 2462 MHz  |
| Channel 4: | 2427 MHz  | Channel 8: | 2447 MHz  |             |           |

Note:

1. The EUT is a Wireless Thin Client with a built-in 2.4GHz transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 11Mbps and 802.11g is 54Mbps)
4. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
5. Part 15 Subpart B compliance for spread spectrum devices is shown on the report no. 069L032-RF-US-P13V01-1.
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

## 1.2. Operational Description

The EUT is a Wireless Thin Client. It supports 1, 2, 5.5, 11Mbps in IEEE 802.11b mode and 6, 9, 12, 18, 24, 36, 48, 54Mbps in 802.11g mode. The signals are modulated by DSSS in IEEE 802.11b mode and OFDM in IEEE 802.11g mode. The number of channels is 11 in 2412-2462MHz.

This Wireless Thin Client, complied with IEEE 802.11b and IEEE 802.11g, use a high-efficiency wireless LAN adapter, which allows your computer to connect to a wireless network and to share resources, such as files or printers without being bound to the network wires. Operation in 2.4GHz, the Wireless Thin Client Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b and IEEE 802.11g network.

|           |                             |
|-----------|-----------------------------|
| Test Mode | Mode 1: Transmitter 802.11b |
|           | Mode 2: Transmitter 802.11g |

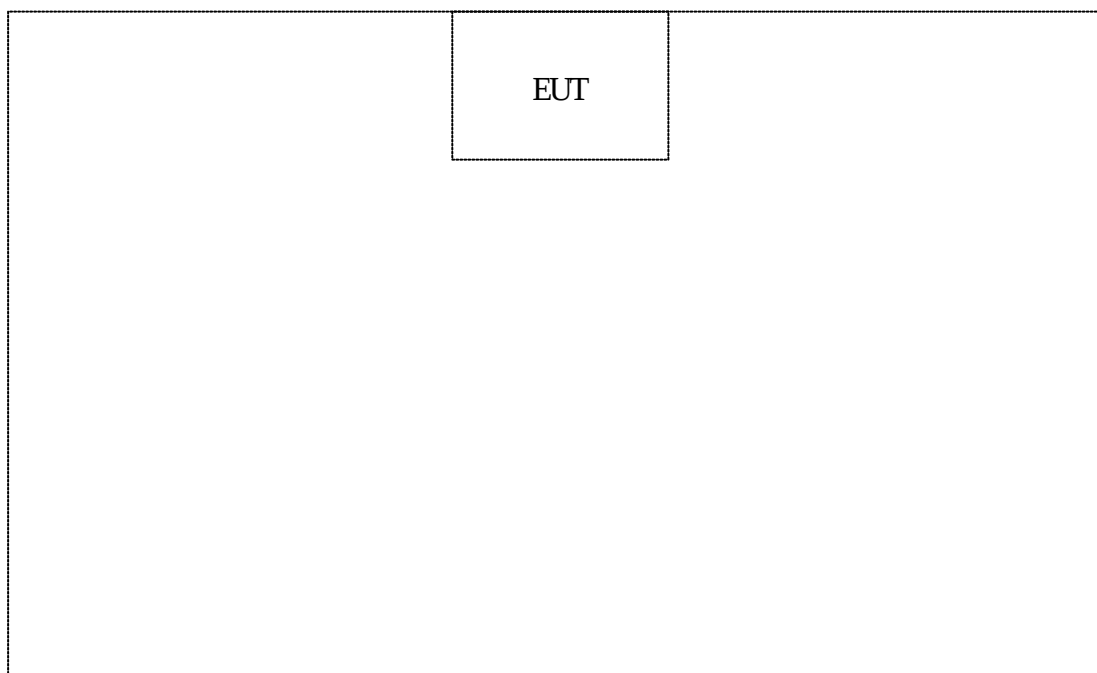
### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

|    | Product | Manufacturer | Model No. | Serial No. | FCC ID | Power Cord |
|----|---------|--------------|-----------|------------|--------|------------|
| 1. | N/A     | N/A          | N/A       | N/A        | N/A    | N/A        |

|    | Signal Cable Type | Signal Cable Description |
|----|-------------------|--------------------------|
| A. | N/A               | N/A                      |

### 1.4. Configuration of Test System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4.
- (2) Execute RT2561 QA Test Program v1.7 on the EUT.
- (3) Setup the test mode, the test channel, the data rate, and the power level.
- (4) Press "OK" to start the continuous transmission.
- (5) Verify that the EUT works properly.

## 1.6. Test Facility

Ambient conditions in the laboratory:

| Items                      | Required (IEC 68-1) | Actual   |
|----------------------------|---------------------|----------|
| Temperature (°C)           | 15-35               | 20-35    |
| Humidity (%RH)             | 25-75               | 50-65    |
| Barometric pressure (mbar) | 860-1060            | 950-1000 |

Site Description: File on  
Federal Communications Commission  
FCC Engineering Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046  
Reference 31040/SIT1300F2



Accreditation on NVLAP  
NVLAP Lab Code: 200533-0



Site Name: Quietek Corporation  
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## 2. Conducted Emission

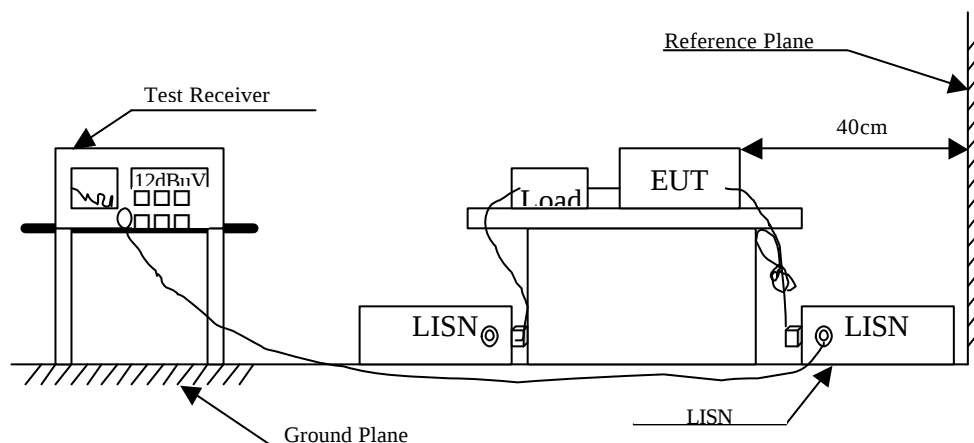
### 2.1. Test Equipment

The following test equipment are used during the conducted emission test:

| Item | Instrument         | Manufacturer | Type No./Serial No | Last Cal. | Remark      |
|------|--------------------|--------------|--------------------|-----------|-------------|
| 1    | Test Receiver      | R & S        | ESCS 30/825442/17  | May, 2006 |             |
| 2    | L.I.S.N.           | R & S        | ESH3-Z5/825016/6   | May, 2006 | EUT         |
| 3    | L.I.S.N.           | Kyoritsu     | KNW-407/8-1420-3   | May, 2006 | Peripherals |
| 4    | Pulse Limiter      | R & S        | ESH3-Z2            | May, 2006 |             |
| 5    | No.1 Shielded Room |              |                    | N/A       |             |

Note: All instruments are calibrated every one year.

### 2.2. Test Setup



### 2.3. Limits

| FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit |                      |                      |
|-----------------------------------------------------|----------------------|----------------------|
| Frequency<br>MHz                                    | Limits               |                      |
|                                                     | uV                   | dBuV                 |
| 0.15 - 0.50                                         | 66-56 <sub>(註)</sub> | 56-46 <sub>(註)</sub> |
| 0.50-5.0                                            | 56                   | 46                   |
| 5.0 - 30                                            | 60                   | 50                   |

## 2.4. 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 50 ohm /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 refers 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 invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

## 2.5. Uncertainty

$\pm 2.26$  dB

## 2.6. Test Result of Conducted Emission

Product : Wireless Thin Client  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

| Frequency<br>MHz  | Correct<br>Factor<br>dB | Reading<br>Level<br>dBuV | Measurement<br>Level<br>dBuV | Margin<br>dB | Limit<br>dBuV |
|-------------------|-------------------------|--------------------------|------------------------------|--------------|---------------|
| <b>LINE 1</b>     |                         |                          |                              |              |               |
| <b>Quasi-Peak</b> |                         |                          |                              |              |               |
| 0.150             | 0.202                   | 40.630                   | 40.832                       | -25.168      | 66.000        |
| 0.177             | 0.202                   | 41.830                   | 42.032                       | -23.197      | 65.229        |
| 0.360             | 0.214                   | 38.020                   | 38.234                       | -21.766      | 60.000        |
| 0.540             | 0.217                   | 31.820                   | 32.037                       | -23.963      | 56.000        |
| 0.598             | 0.218                   | 27.270                   | 27.488                       | -28.512      | 56.000        |
| 18.763            | 0.950                   | 30.970                   | 31.920                       | -28.080      | 60.000        |
| <b>Average</b>    |                         |                          |                              |              |               |
| 0.150             | 0.202                   | 15.400                   | 15.602                       | -40.398      | 56.000        |
| 0.177             | 0.202                   | 32.050                   | 32.252                       | -22.977      | 55.229        |
| 0.360             | 0.214                   | 37.220                   | 37.434                       | -12.566      | 50.000        |
| 0.540             | 0.217                   | 30.990                   | 31.207                       | -14.793      | 46.000        |
| 0.598             | 0.218                   | 26.690                   | 26.908                       | -19.092      | 46.000        |
| 18.763            | 0.950                   | 20.540                   | 21.490                       | -28.510      | 50.000        |

### Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Wireless Thin Client  
Test Item : Conducted Emission Test  
Power Line : Line 2  
Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 2</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.181             | 0.202   | 42.720  | 42.922      | -22.192 | 65.114 |
| 0.239             | 0.203   | 38.450  | 38.653      | -24.804 | 63.457 |
| 0.299             | 0.210   | 37.190  | 37.400      | -24.343 | 61.743 |
| 0.359             | 0.214   | 37.680  | 37.894      | -22.135 | 60.029 |
| 0.599             | 0.218   | 30.920  | 31.138      | -24.862 | 56.000 |
| 18.650            | 0.779   | 40.460  | 41.239      | -18.761 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.181             | 0.202   | 34.260  | 34.462      | -20.652 | 55.114 |
| 0.239             | 0.203   | 33.850  | 34.053      | -19.404 | 53.457 |
| 0.299             | 0.210   | 34.760  | 34.970      | -16.773 | 51.743 |
| 0.359             | 0.214   | 36.810  | 37.024      | -13.005 | 50.029 |
| 0.599             | 0.218   | 30.490  | 30.708      | -15.292 | 46.000 |
| 18.650            | 0.779   | 34.410  | 35.189      | -14.811 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Wireless Thin Client  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.178             | 0.202   | 41.790  | 41.992      | -23.208 | 65.200 |
| 0.236             | 0.203   | 33.530  | 33.733      | -29.810 | 63.543 |
| 0.298             | 0.214   | 35.780  | 35.994      | -25.777 | 61.771 |
| 0.358             | 0.214   | 35.720  | 35.934      | -24.123 | 60.057 |
| 0.841             | 0.231   | 30.640  | 30.871      | -25.129 | 56.000 |
| 1.321             | 0.247   | 30.210  | 30.457      | -25.543 | 56.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.178             | 0.202   | 32.260  | 32.462      | -22.738 | 55.200 |
| 0.236             | 0.203   | 26.860  | 27.063      | -26.480 | 53.543 |
| 0.298             | 0.214   | 33.870  | 34.084      | -17.687 | 51.771 |
| 0.358             | 0.214   | 34.360  | 34.574      | -15.483 | 50.057 |
| 0.841             | 0.231   | 30.080  | 30.311      | -15.689 | 46.000 |
| 1.321             | 0.247   | 29.680  | 29.927      | -16.073 | 46.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Wireless Thin Client  
Test Item : Conducted Emission Test  
Power Line : Line 2  
Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 2</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.177             | 0.202   | 40.590  | 40.792      | -24.437 | 65.229 |
| 0.237             | 0.203   | 37.050  | 37.253      | -26.261 | 63.514 |
| 0.300             | 0.211   | 39.020  | 39.231      | -22.483 | 61.714 |
| 0.357             | 0.214   | 34.870  | 35.084      | -25.002 | 60.086 |
| 0.600             | 0.218   | 32.390  | 32.608      | -23.392 | 56.000 |
| 1.080             | 0.242   | 31.080  | 31.322      | -24.678 | 56.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.177             | 0.202   | 32.330  | 32.532      | -22.697 | 55.229 |
| 0.237             | 0.203   | 32.040  | 32.243      | -21.271 | 53.514 |
| 0.300             | 0.211   | 37.240  | 37.451      | -14.263 | 51.714 |
| 0.357             | 0.214   | 33.620  | 33.834      | -16.252 | 50.086 |
| 0.600             | 0.218   | 31.690  | 31.908      | -14.092 | 46.000 |
| 1.080             | 0.242   | 30.070  | 30.312      | -15.688 | 46.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

### 3. Peak Power Output

#### 3.1. Test Equipment

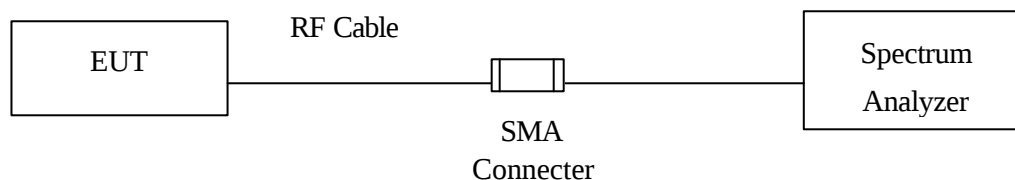
The following test equipments are used during the radiated emission tests:

| Equipment       | Manufacturer | Model No./Serial No.  | Last Cal. |
|-----------------|--------------|-----------------------|-----------|
| X Test Receiver | R & S        | ESI 26 / 838786 / 004 | May, 2006 |

Note: 1. All instruments are calibrated every one year.  
2. The test instruments marked by “X” are used to measure the final test results.

#### 3.2. Test Setup

Conducted Measurement



#### 3.3. Limits

The maximum peak power shall be less 1 Watt.

#### 3.4. Uncertainty

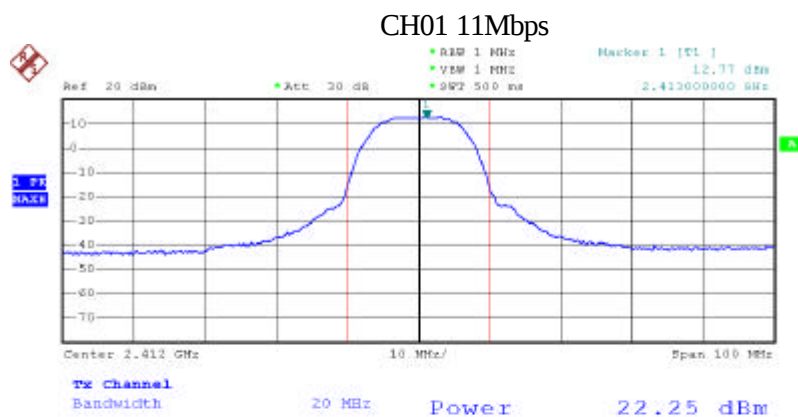
$\pm 1.27$  dB

### 3.5. Test Result of Peak Power Output

Product : Wireless Thin Client  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

#### Data Speed: 11Mbps

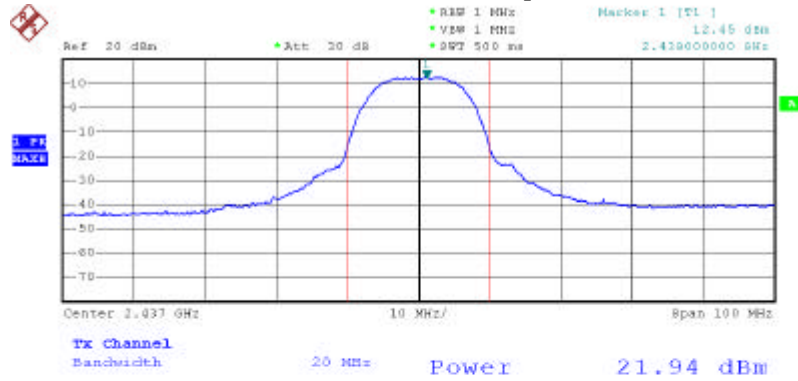
| Channel No. | Frequency (MHz) | Measurement | Required Limit | Result |
|-------------|-----------------|-------------|----------------|--------|
| 1           | 2412.00         | 22.25dBm    | 1Watt= 30 dBm  | Pass   |
| 6           | 2437.00         | 21.94dBm    | 1Watt= 30 dBm  | Pass   |
| 11          | 2462.00         | 22.70dBm    | 1Watt= 30 dBm  | Pass   |



PN1

Date: 18.DEC.2006 15:49:18

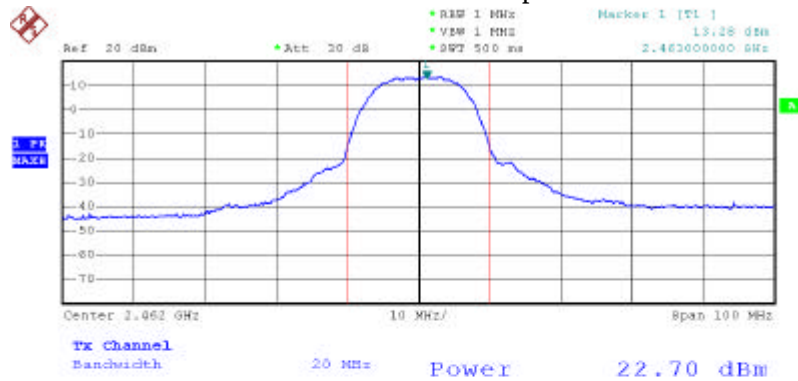
### CH06 11Mbps



PN1

Date: 18.DEC.2006 15:50:27

### CH11 11Mbps



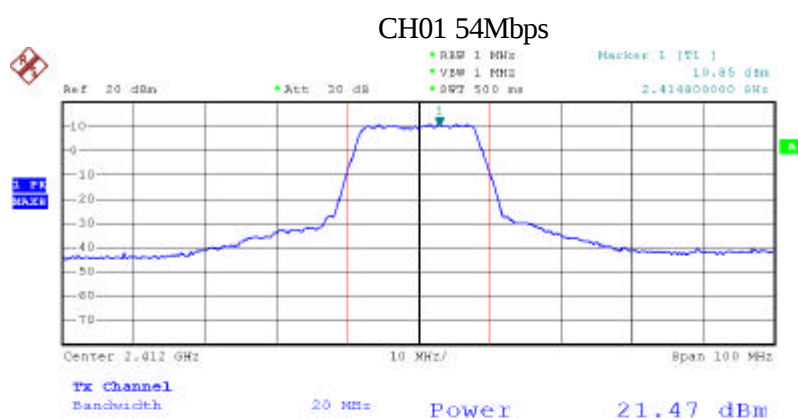
PN1

Date: 18.DEC.2006 15:51:12

Product : Wireless Thin Client  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

**Data Speed: 54Mbps**

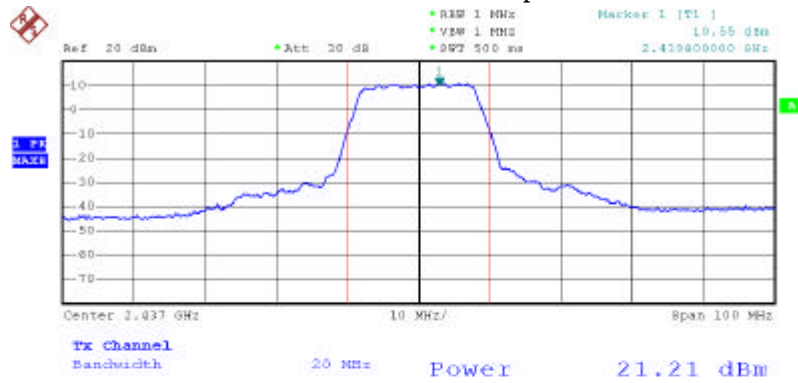
| Channel No. | Frequency (MHz) | Measurement | Required Limit | Result |
|-------------|-----------------|-------------|----------------|--------|
| 1           | 2412.00         | 21.47dBm    | 1Watt= 30 dBm  | Pass   |
| 6           | 2437.00         | 21.21dBm    | 1Watt= 30 dBm  | Pass   |
| 11          | 2462.00         | 21.83dBm    | 1Watt= 30 dBm  | Pass   |



PN1

Date: 18.DEC.2006 15:52:24

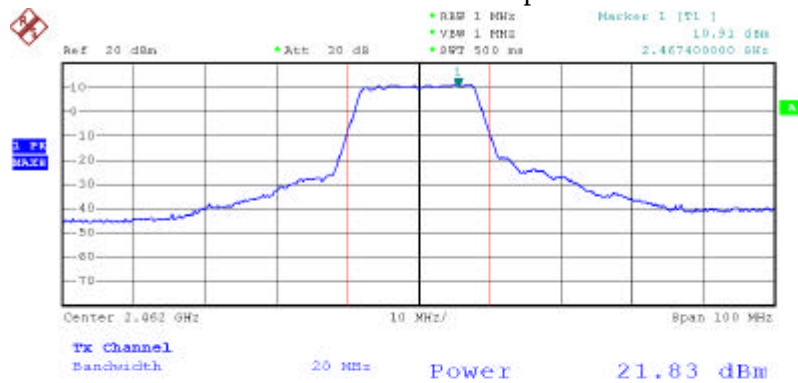
### CH06 54Mbps



PN1

Date: 18.DEC.2006 15:53:19

### CH11 54Mbps



PN1

Date: 18.DEC.2006 15:53:56

## 4. Radiated Emission

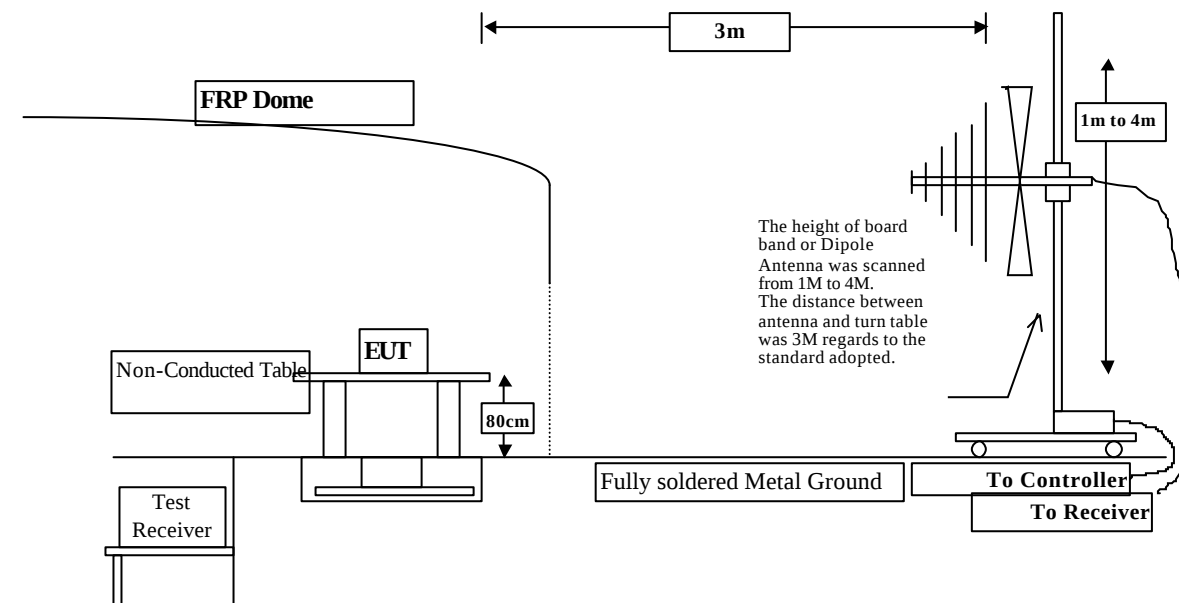
### 4.1. Test Equipment

The following test equipment are used during the radiated emission test:

| Test Site                                    |   | Equipment         | Manufacturer | Model No./Serial No.   | Last Cal.  |
|----------------------------------------------|---|-------------------|--------------|------------------------|------------|
| <input type="checkbox"/> Site # 1            |   | Test Receiver     | R & S        | ESVS 10 / 834468/003   | May, 2006  |
|                                              |   | Spectrum Analyzer | Advantest    | R3162/ 00803480        | May, 2006  |
|                                              |   | Pre-Amplifier     | Advantest    | BB525C/ 3307A01812     | May, 2006  |
|                                              |   | Bilog Antenna     | SCHAFFNER    | CBL6112B / 2697        | Sep., 2006 |
| <input type="checkbox"/> Site # 2            |   | Test Receiver     | R & S        | ESCS 30 / 836858 / 022 | May, 2006  |
|                                              |   | Spectrum Analyzer | Advantest    | R3162 / 100803466      | May, 2006  |
|                                              |   | Pre-Amplifier     | Advantest    | BB525C/3307A01814      | May, 2006  |
|                                              |   | Bilog Antenna     | SCHAFFNER    | CBL6112B / 2705        | May, 2006  |
|                                              |   | Horn Antenna      | ETS          | 3115 / 0005-6160       | Sep., 2006 |
|                                              |   | Pre-Amplifier     | QTK          | QTK-AMP-01/ 0001       | May, 2006  |
| <input checked="" type="checkbox"/> Site # 3 | X | Test Receiver     | R & S        | ESI 26 / 838786/004    | May, 2006  |
|                                              | X | Spectrum Analyzer | Agilent      | E4407B / US39440758    | May, 2006  |
|                                              | X | Bilog Antenna     | SCHAFFNER    | CBL6112B / 2697        | May, 2006  |
|                                              | X | Horn Antenna      | Schwarzbeck  | BBHA9120D / 305, 306   | July, 2006 |
|                                              | X | Horn Antenna      | Schwarzbeck  | BBHA9170 / 208, 209    | July, 2006 |
|                                              | X | Pre-Amplifier     | QTK          | QTK-AMP-01 / 0001      | July, 2006 |
|                                              | X | Pre-Amplifier     | QTK          | QTK-AMP-03 / 0003      | May, 2006  |
|                                              | X | Pre-Amplifier     | HP           | 8449B / 3008A01123     | July, 2006 |

Note: 1. All equipments are calibrated every one year.  
2. Test equipments marked by "X" are used to measure the final test results.

## 4.2. Test Setup



## 4.3. Limits

### ➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

| FCC Part 15 Subpart C Paragraph 15.209(a) Limits |          |           |
|--------------------------------------------------|----------|-----------|
| Frequency MHz                                    | uV/m @3m | dBuV/m@3m |
| 30-88                                            | 100      | 40        |
| 88-216                                           | 150      | 43.5      |
| 216-960                                          | 200      | 46        |
| Above 960                                        | 500      | 54        |

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
  2. In the Above Table, the tighter limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### **4.4. 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 EUT was positioned such that the distance from antenna to the EUT was 3 meters.

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 additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The frequency range from 30MHz to 10th harmonics is checked.

#### **4.5. Uncertainty**

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

#### 4.6. Test Result of Radiated Emission

Product : Wireless Thin Client  
Test Item : Harmonic Radiated Emission Data  
Test Site : No.3 OATS  
Test Mode : Mode 1: Transmitter 802.11b (2412MHz)

| Frequency<br>MHz             | Correct<br>Factor<br>dB | Reading<br>Level<br>dBuV | Measurement<br>Level<br>dBuV/m | Margin<br>dB | Limit<br>dBuV/m |
|------------------------------|-------------------------|--------------------------|--------------------------------|--------------|-----------------|
| <b>Horizontal</b>            |                         |                          |                                |              |                 |
| <b>Peak Detector:</b>        |                         |                          |                                |              |                 |
| 4824.000                     | 3.781                   | 38.309                   | 42.090                         | -31.910      | 74.000          |
| 7236.000                     | 10.969                  | 38.855                   | 49.824                         | -24.176      | 74.000          |
| 9648.000                     | 14.882                  | 38.006                   | 52.888                         | -21.112      | 74.000          |
| <b>Average<br/>Detector:</b> |                         |                          |                                |              |                 |
| --                           |                         |                          |                                |              |                 |
| <b>Vertical</b>              |                         |                          |                                |              |                 |
| <b>Peak Detector:</b>        |                         |                          |                                |              |                 |
| 4824.000                     | 3.781                   | 39.617                   | 43.398                         | -30.602      | 74.000          |
| 7236.000                     | 10.969                  | 36.693                   | 47.662                         | -26.338      | 74.000          |
| 9648.000                     | 14.882                  | 37.482                   | 52.364                         | -21.636      | 74.000          |
| <b>Average<br/>Detector:</b> |                         |                          |                                |              |                 |
| --                           |                         |                          |                                |              |                 |

#### Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless Thin Client  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2437 MHz)

| Frequency | Correct | Reading | Measurement | Margin | Limit  |
|-----------|---------|---------|-------------|--------|--------|
| MHz       | Factor  | Level   | Level       |        |        |
|           | dB      | dBuV    | dBuV/m      | dB     | dBuV/m |

#### Horizontal

##### Peak Detector:

|          |        |        |        |         |        |
|----------|--------|--------|--------|---------|--------|
| 4874.000 | 3.913  | 38.096 | 42.009 | -31.991 | 74.000 |
| 7311.000 | 11.547 | 37.333 | 48.880 | -25.120 | 74.000 |
| 9748.000 | 14.260 | 37.468 | 51.728 | -22.272 | 74.000 |

#### Average

##### Detector:

--

#### Vertical

##### Peak Detector:

|          |        |        |        |         |        |
|----------|--------|--------|--------|---------|--------|
| 4874.000 | 3.913  | 37.670 | 41.583 | -32.417 | 74.000 |
| 7311.000 | 11.547 | 36.804 | 48.351 | -25.649 | 74.000 |
| 9748.000 | 14.260 | 37.839 | 52.099 | -21.901 | 74.000 |

#### Average

##### Detector:

--

#### Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless Thin Client  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2462 MHz)

| Frequency | Correct | Reading | Measurement | Margin | Limit  |
|-----------|---------|---------|-------------|--------|--------|
| MHz       | Factor  | Level   | Level       |        |        |
|           | dB      | dBuV    | dBuV/m      | dB     | dBuV/m |

#### Horizontal

##### Peak Detector:

|          |        |        |        |         |        |
|----------|--------|--------|--------|---------|--------|
| 4924.000 | 4.054  | 38.001 | 42.055 | -31.945 | 74.000 |
| 7386.000 | 11.873 | 37.542 | 49.416 | -24.584 | 74.000 |
| 9848.000 | 13.462 | 37.701 | 51.163 | -22.837 | 74.000 |

##### Average

##### Detector:

--

#### Vertical

##### Peak Detector:

|          |        |        |        |         |        |
|----------|--------|--------|--------|---------|--------|
| 4924.000 | 4.054  | 38.505 | 42.559 | -31.441 | 74.000 |
| 7386.000 | 11.873 | 37.790 | 49.664 | -24.336 | 74.000 |
| 9848.000 | 13.462 | 37.690 | 51.152 | -22.848 | 74.000 |

##### Average

##### Detector:

--

#### Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless Thin Client  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2412 MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>     |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 4824.000              | 3.781   | 37.793  | 41.574      | -32.426 | 74.000 |
| 7236.000              | 10.969  | 38.652  | 49.621      | -24.379 | 74.000 |
| 9648.000              | 14.882  | 37.004  | 51.886      | -22.114 | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| --                    |         |         |             |         |        |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 4824.000              | 3.781   | 38.932  | 42.713      | -31.287 | 74.000 |
| 7236.000              | 10.969  | 38.305  | 49.274      | -24.726 | 74.000 |
| 9648.000              | 14.882  | 37.624  | 52.506      | -21.494 | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| --                    |         |         |             |         |        |

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless Thin Client  
Test Item : Harmonic Radiated Emission Data  
Test Site : No.3 OATS  
Test Mode : Mode 2: Transmitter 802.11g (2437 MHz)

| Frequency | Correct | Reading | Measurement | Margin | Limit  |
|-----------|---------|---------|-------------|--------|--------|
|           | Factor  | Level   | Level       |        |        |
| MHz       | dB      | dBuV    | dBuV/m      | dB     | dBuV/m |

#### Horizontal

##### Peak Detector:

|          |        |        |        |         |        |
|----------|--------|--------|--------|---------|--------|
| 4874.000 | 3.913  | 38.481 | 42.394 | -31.606 | 74.000 |
| 7311.000 | 11.547 | 37.089 | 48.636 | -25.364 | 74.000 |
| 9748.000 | 14.260 | 36.936 | 51.196 | -22.804 | 74.000 |

#### Average

##### Detector:

--

#### Vertical

##### Peak Detector:

|          |        |        |        |         |        |
|----------|--------|--------|--------|---------|--------|
| 4874.000 | 3.913  | 37.954 | 41.867 | -32.133 | 74.000 |
| 7311.000 | 11.547 | 37.083 | 48.630 | -25.370 | 74.000 |
| 9748.000 | 14.260 | 37.240 | 51.500 | -22.500 | 74.000 |

#### Average

##### Detector:

--

#### Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless Thin Client  
Test Item : Harmonic Radiated Emission Data  
Test Site : No.3 OATS  
Test Mode : Mode 2: Transmitter 802.11g (2462 MHz)

| Frequency | Correct | Reading | Measurement | Margin | Limit  |
|-----------|---------|---------|-------------|--------|--------|
| MHz       | Factor  | Level   | Level       |        |        |
|           | dB      | dBuV    | dBuV/m      | dB     | dBuV/m |

#### Horizontal

##### Peak Detector:

|          |        |        |        |         |        |
|----------|--------|--------|--------|---------|--------|
| 4924.000 | 4.054  | 38.279 | 42.333 | -31.667 | 74.000 |
| 7386.000 | 11.873 | 37.695 | 49.569 | -24.431 | 74.000 |
| 9848.000 | 13.462 | 36.529 | 49.991 | -24.009 | 74.000 |

##### Average

##### Detector:

--

#### Vertical

##### Peak Detector:

|          |        |        |        |         |        |
|----------|--------|--------|--------|---------|--------|
| 4924.000 | 4.054  | 38.166 | 42.220 | -31.780 | 74.000 |
| 7386.000 | 11.873 | 37.501 | 49.375 | -24.625 | 74.000 |
| 9848.000 | 13.462 | 37.578 | 51.040 | -22.960 | 74.000 |

##### Average

##### Detector:

--

#### Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless Thin Client  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2437 MHz)

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b> |         |         |             |         |        |
| 287.100           | 13.473  | 19.400  | 32.873      | -13.127 | 46.000 |
| 333.100           | 14.271  | 11.800  | 26.071      | -19.929 | 46.000 |
| 400.000           | 16.575  | 17.960  | 34.535      | -11.465 | 46.000 |
| 600.870           | 20.011  | 21.410  | 41.421      | -4.579  | 46.000 |
| 713.800           | 20.587  | 13.900  | 34.486      | -11.514 | 46.000 |
| 850.000           | 22.366  | 16.800  | 39.166      | -6.834  | 46.000 |
| <b>Vertical</b>   |         |         |             |         |        |
| 131.100           | 11.909  | 14.900  | 26.809      | -16.691 | 43.500 |
| 199.700           | 9.711   | 14.800  | 24.511      | -18.989 | 43.500 |
| 333.100           | 14.321  | 18.400  | 32.721      | -13.279 | 46.000 |
| 522.200           | 18.746  | 17.750  | 36.496      | -9.504  | 46.000 |
| 599.900           | 21.902  | 14.530  | 36.431      | -9.569  | 46.000 |
| 796.300           | 21.884  | 12.400  | 34.284      | -11.716 | 46.000 |

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Wireless Thin Client  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2437 MHz)

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b> |         |         |             |         |        |
| 267.650           | 13.689  | 16.600  | 30.289      | -15.711 | 46.000 |
| 299.100           | 14.130  | 16.500  | 30.630      | -15.370 | 46.000 |
| 359.900           | 15.309  | 16.540  | 31.849      | -14.151 | 46.000 |
| 456.800           | 18.477  | 12.400  | 30.877      | -15.123 | 46.000 |
| 653.200           | 20.881  | 22.100  | 42.981      | -3.019  | 46.000 |
| 800.100           | 21.772  | 9.970   | 31.742      | -14.258 | 46.000 |
| <b>Vertical</b>   |         |         |             |         |        |
| 156.100           | 10.170  | 11.400  | 21.570      | -21.930 | 43.500 |
| 240.100           | 12.356  | 15.400  | 27.756      | -18.244 | 46.000 |
| 287.100           | 13.647  | 13.520  | 27.167      | -18.833 | 46.000 |
| 342.700           | 14.637  | 16.900  | 31.537      | -14.463 | 46.000 |
| 456.800           | 18.502  | 16.900  | 35.402      | -10.598 | 46.000 |
| 500.450           | 18.354  | 16.300  | 34.654      | -11.346 | 46.000 |

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. "■" means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

## 5. Band Edge

### 5.1. Test Equipment

The following test equipments are used during the band edge tests:

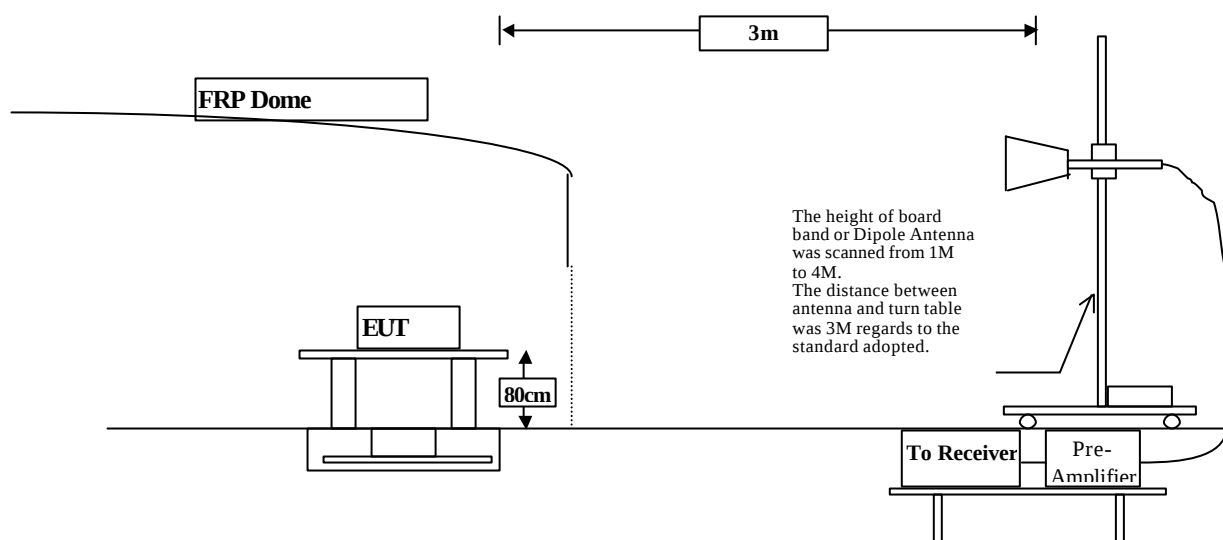
|   | Equipment         | Manufacturer | Model No./Serial No. | Last Cal.  |
|---|-------------------|--------------|----------------------|------------|
| X | Test Receiver     | R & S        | ESI 26 / 838786/004  | May, 2006  |
| X | Spectrum Analyzer | Agilent      | E4407B / US39440758  | May, 2006  |
| X | Bilog Antenna     | SCHAFFNER    | CBL6112B / 2697      | May, 2006  |
| X | Horn Antenna      | Schwarzbeck  | BBHA9120D / 305, 306 | July, 2006 |
| X | Horn Antenna      | Schwarzbeck  | BBHA9170 / 208, 209  | July, 2006 |
| X | Pre-Amplifier     | QTK          | QTK-AMP-01 / 0001    | July, 2006 |
| X | Pre-Amplifier     | QTK          | QTK-AMP-03 / 0003    | May, 2006  |
| X | Pre-Amplifier     | HP           | 8449B / 3008A01123   | July, 2006 |

OATS No.3

- Note:
1. All equipments are calibrated every one year.
  2. The test equipments marked by "X" are used to measure the final test results.

### 5.2. Test Setup

#### RF Radiated Measurement:



### 5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

### 5.4. 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 EUT was positioned such that the distance from antenna to the EUT was 3 meters.

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 bandwidth setting below 1GHz and above 1GHz on the field strength meter is 120 kHz and 1MHz, respectively.

### 5.5. Uncertainty

$\pm 3.9$  dB above 1GHz

$\pm 3.8$  dB below 1GHz

## 5.6. Test Result of Band Edge

Product : Wireless Thin Client  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

### RF Radiated Measurement:

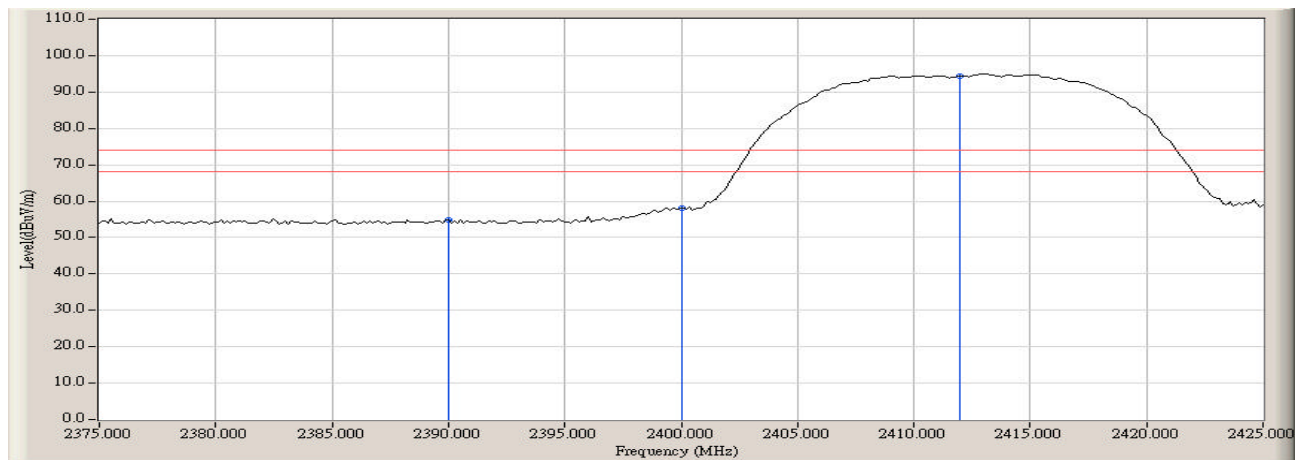
| Channel No.    | Frequency (MHz) | Required Limit (dBc) | Result |
|----------------|-----------------|----------------------|--------|
| 1 (Horizontal) | <2400           | >20                  | Pass   |

### RF Radiated Measurement (Horizontal):

| Channel No. | Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | Peak Limit (dBuV/m) | Average Limit (dBuV/m) | Result |
|-------------|-----------------|---------------------|----------------------|-------------------------|---------------------|------------------------|--------|
| 1 (Peak)    | 2390.000        | -2.257              | 57.040               | 54.783                  | 74.00               | 54.00                  | Pass   |
| 1 (Average) | 2390.000        | -2.257              | 39.701               | 37.444                  | 74.00               | 54.00                  | Pass   |

Figure Channel 1:

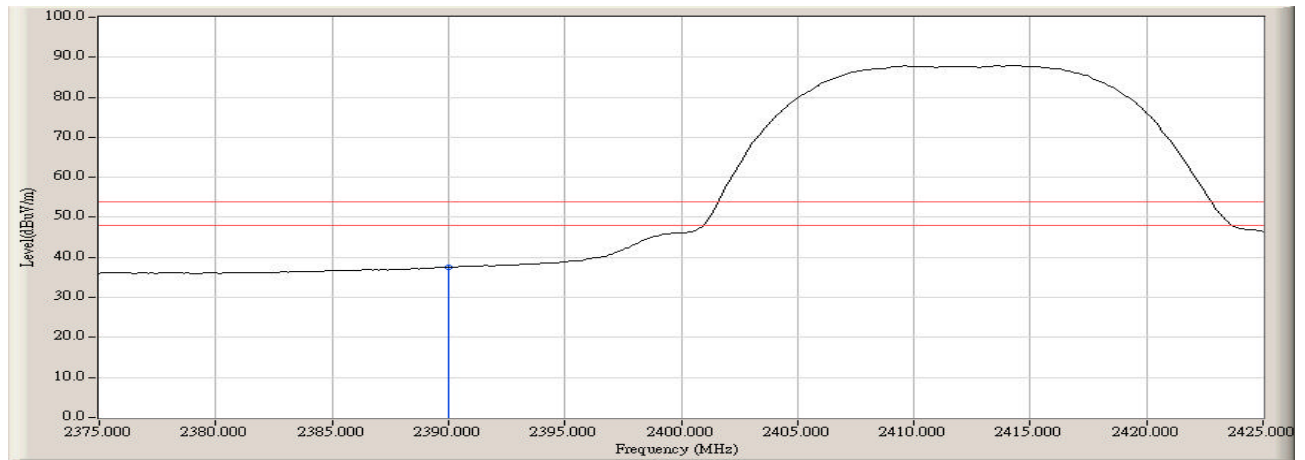
Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1:

Horizontal (Average)



Note: RBW=1MHz, VBW=1kHz, Sweep=500ms

Product : Wireless Thin Client  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

**RF Radiated Measurement:**

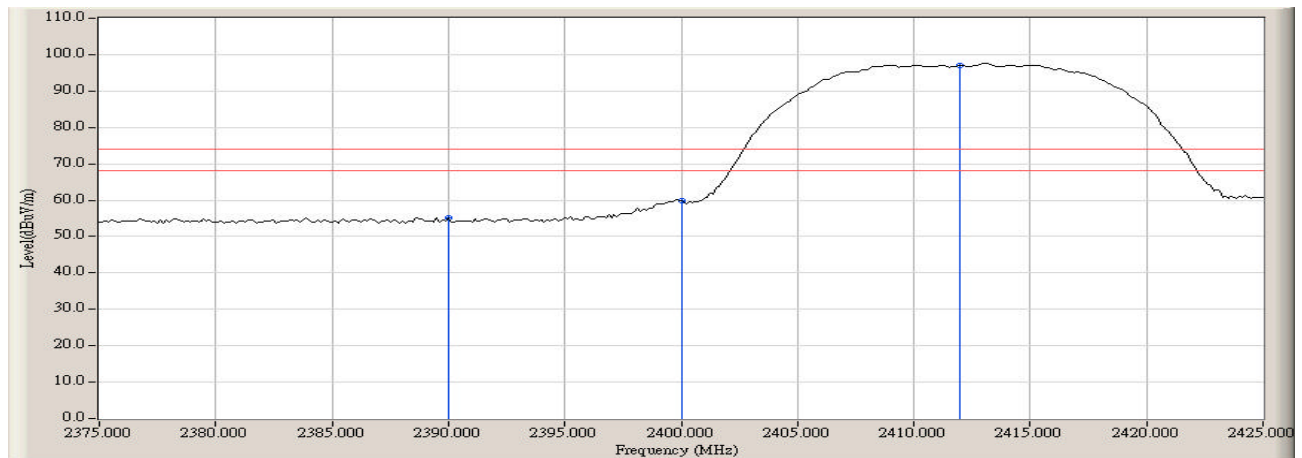
| Channel No.  | Frequency (MHz) | Required Limit (dBc) | Result |
|--------------|-----------------|----------------------|--------|
| 1 (Vertical) | <2400           | >20                  | Pass   |

**RF Radiated Measurement (Vertical):**

| Channel No. | Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | Peak Limit (dBuV/m) | Average Limit (dBuV/m) | Result |
|-------------|-----------------|---------------------|----------------------|-------------------------|---------------------|------------------------|--------|
| 1 (Peak)    | 2390.000        | -2.257              | 57.372               | 55.115                  | 74.00               | 54.00                  | Pass   |
| 1 (Average) | 2390.000        | -2.257              | 39.839               | 37.582                  | 74.00               | 54.00                  | Pass   |

**Figure Channel 1:**

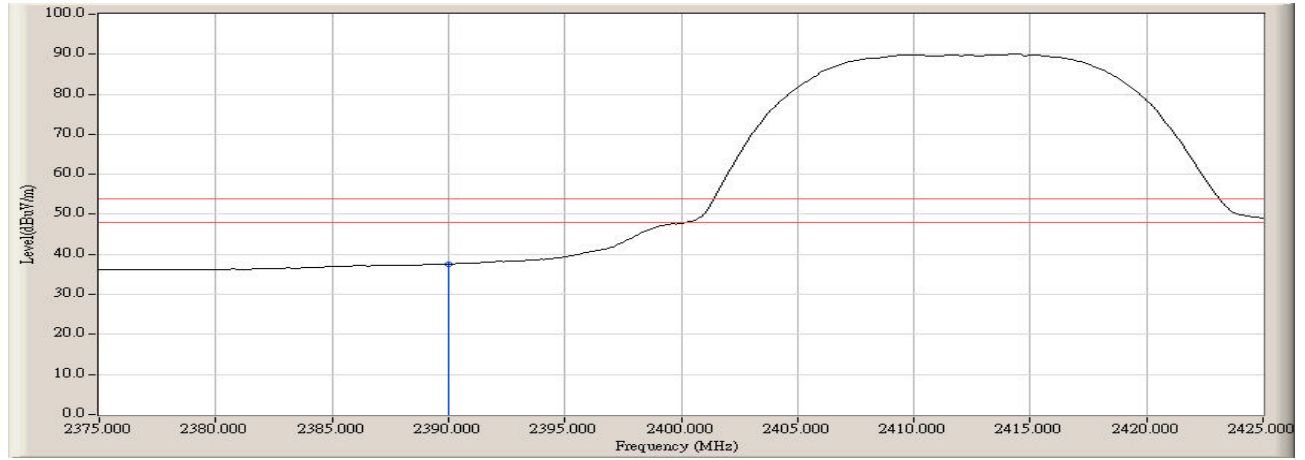
**Vertical (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1:

Vertical (Average)



Note: RBW=1MHz, VBW=1kHz, Sweep=500ms

Product : Wireless Thin Client  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

**RF Radiated Measurement:**

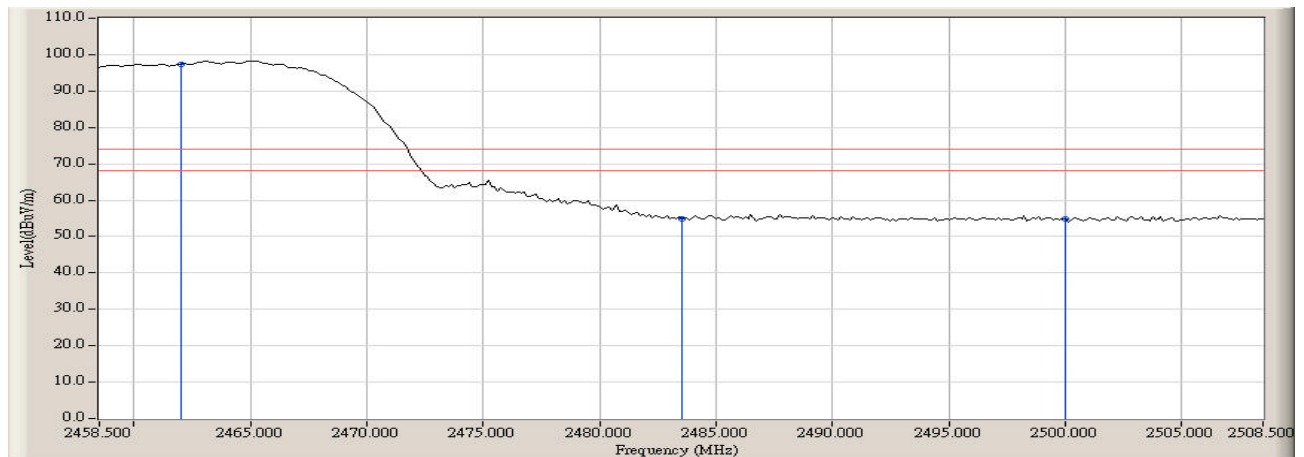
| Channel No.     | Frequency (MHz) | Required Limit (dBc) | Result |
|-----------------|-----------------|----------------------|--------|
| 11 (Horizontal) | >2483.5         | >20                  | Pass   |

**RF Radiated Measurement (Horizontal):**

| Channel No. | Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | Peak Limit (dBuV/m) | Average Limit (dBuV/m) | Result |
|-------------|-----------------|---------------------|----------------------|-------------------------|---------------------|------------------------|--------|
| 11(Peak)    | 2483.500        | -1.896              | 56.618               | 54.723                  | 74.00               | 54.00                  | Pass   |
| 11(Average) | 2483.500        | -1.896              | 42.893               | 40.998                  | 74.00               | 54.00                  | Pass   |

**Figure Channel 11:**

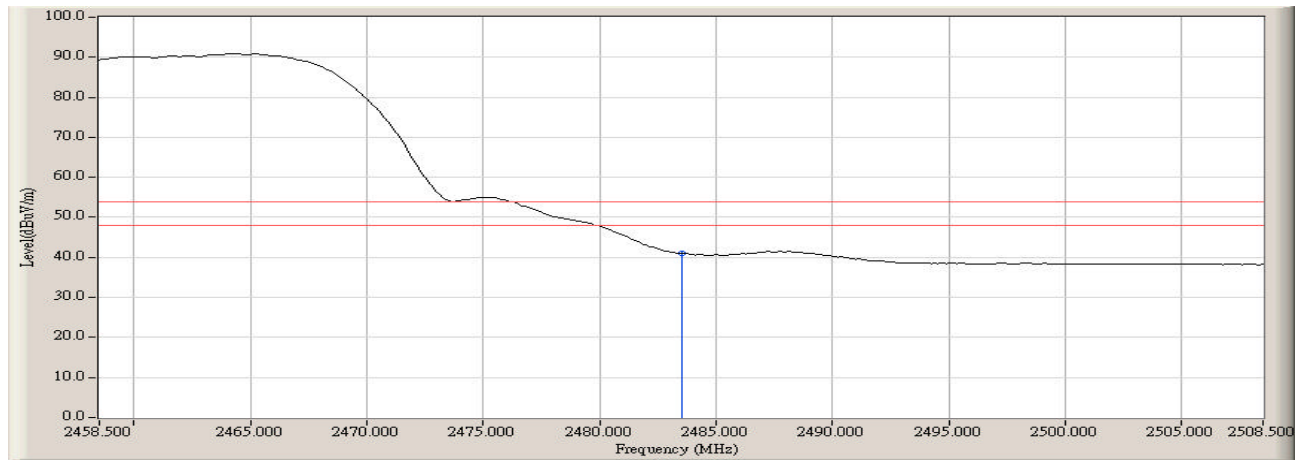
**Horizontal (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1:

Horizontal (Average)



Note: RBW=1MHz, VBW=1kHz, Sweep=500ms

Product : Wireless Thin Client  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

**RF Radiated Measurement:**

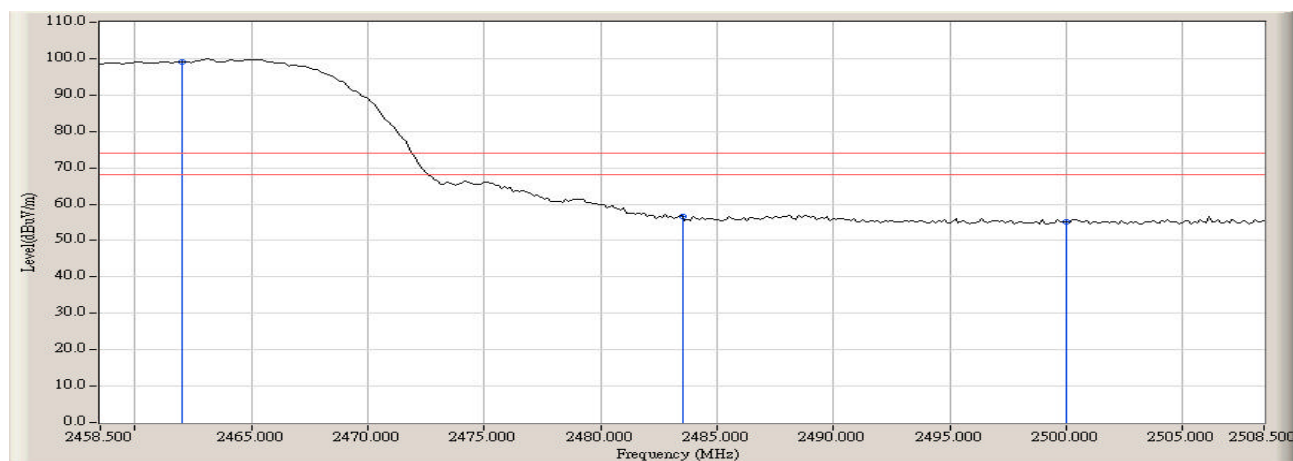
| Channel No.   | Frequency (MHz) | Required Limit (dBc) | Result |
|---------------|-----------------|----------------------|--------|
| 11 (Vertical) | >2483.5         | >20                  | Pass   |

**RF Radiated Measurement (Vertical):**

| Channel No. | Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | Peak Limit (dBuV/m) | Average Limit (dBuV/m) | Result |
|-------------|-----------------|---------------------|----------------------|-------------------------|---------------------|------------------------|--------|
| 11(Peak)    | 2483.500        | -1.896              | 58.481               | 56.586                  | 74.00               | 54.00                  | Pass   |
| 11(Average) | 2483.500        | -1.896              | 43.895               | 42.000                  | 74.00               | 54.00                  | Pass   |

**Figure Channel 11:**

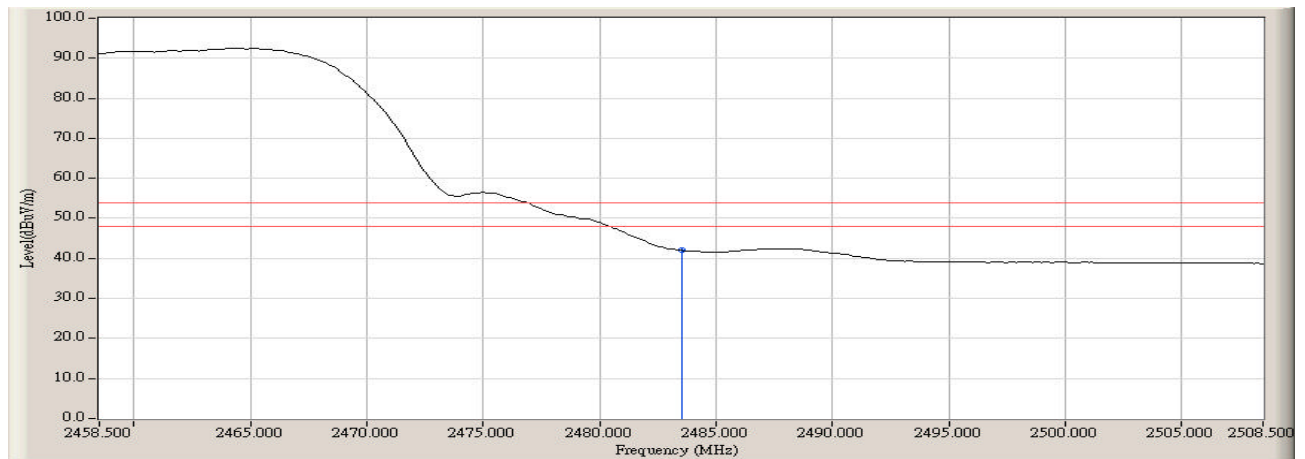
**Vertical (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1:

Vertical (Average)



Note: RBW=1MHz, VBW=1kHz, Sweep=500ms

Product : Wireless Thin Client  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

**RF Radiated Measurement:**

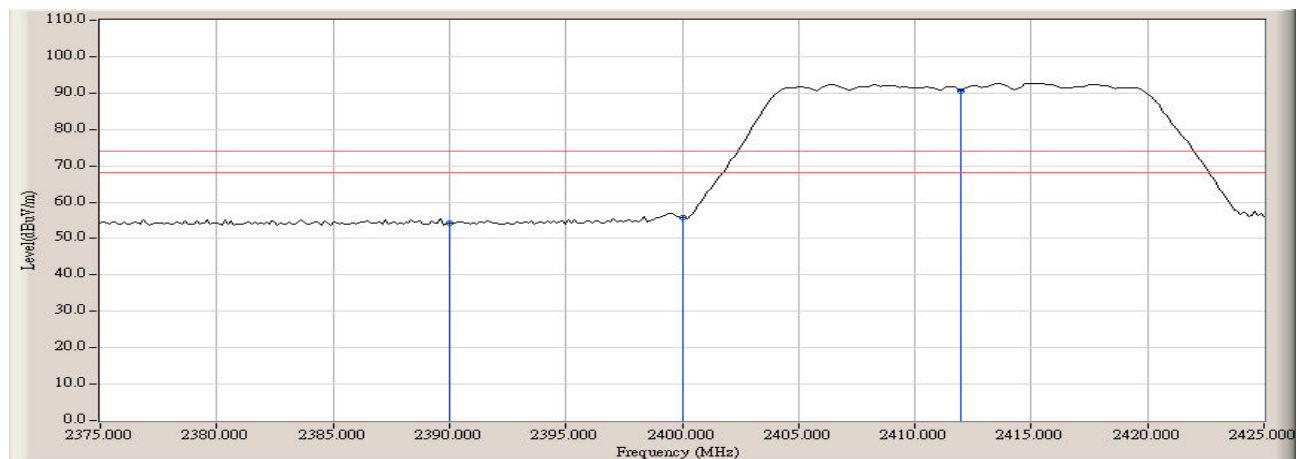
| Channel No.    | Frequency (MHz) | Required Limit (dBc) | Result |
|----------------|-----------------|----------------------|--------|
| 1 (Horizontal) | <2400           | >20                  | Pass   |

**RF Radiated Measurement (Horizontal):**

| Channel No. | Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | Peak Limit (dBuV/m) | Average Limit (dBuV/m) | Result |
|-------------|-----------------|---------------------|----------------------|-------------------------|---------------------|------------------------|--------|
| 1 (Peak)    | 2390.000        | -2.257              | 56.640               | 54.383                  | 74.00               | 54.00                  | Pass   |
| 1 (Average) | 2390.000        | -2.257              | 39.445               | 37.188                  | 74.00               | 54.00                  | Pass   |

**Figure Channel 1:**

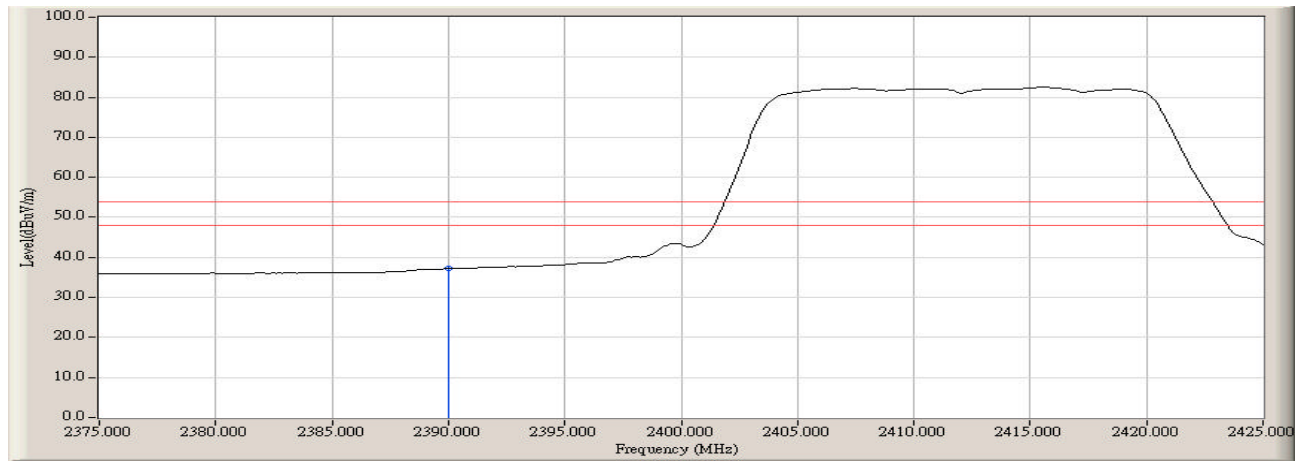
**Horizontal (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1:

Horizontal (Average)



Note: RBW=1MHz, VBW=1kHz, Sweep=500ms

Product : Wireless Thin Client  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

**RF Radiated Measurement:**

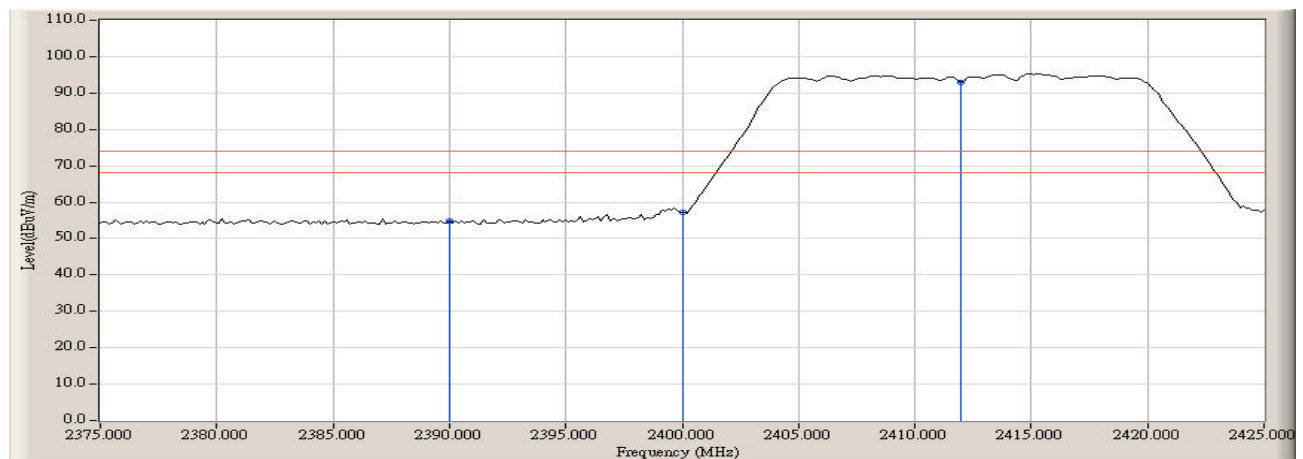
| Channel No.  | Frequency (MHz) | Required Limit (dBc) | Result |
|--------------|-----------------|----------------------|--------|
| 1 (Vertical) | <2400           | >20                  | Pass   |

**RF Radiated Measurement (Vertical):**

| Channel No. | Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | Peak Limit (dBuV/m) | Average Limit (dBuV/m) | Result |
|-------------|-----------------|---------------------|----------------------|-------------------------|---------------------|------------------------|--------|
| 1 (Peak)    | 2390.000        | -2.257              | 56.973               | 54.716                  | 74.00               | 54.00                  | Pass   |
| 1 (Average) | 2390.000        | -2.257              | 39.483               | 37.226                  | 74.00               | 54.00                  | Pass   |

**Figure Channel 1:**

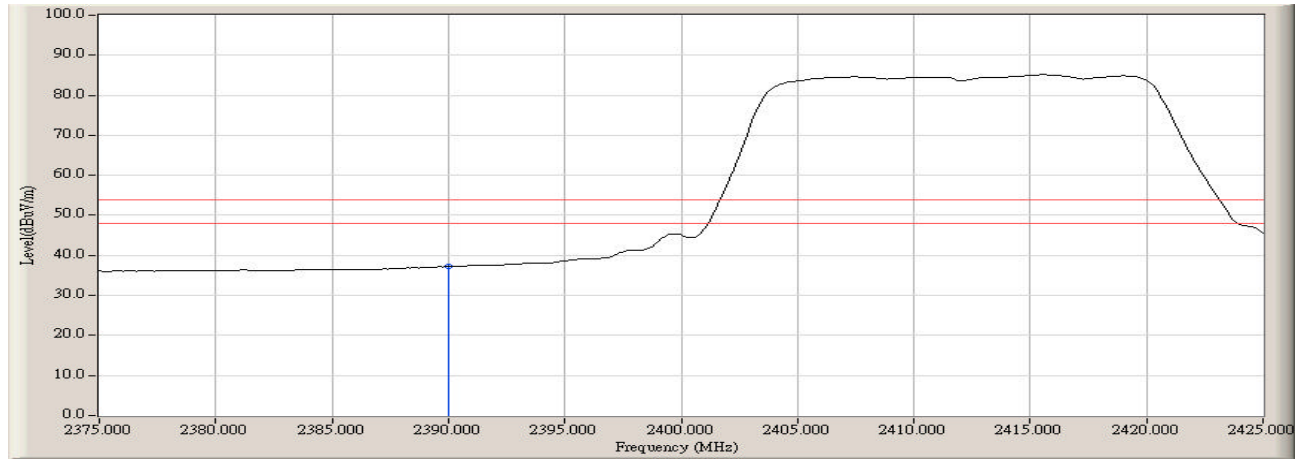
**Vertical (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1:

Vertical (Average)



Note: RBW=1MHz, VBW=1kHz, Sweep=500ms

Product : Wireless Thin Client  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

**RF Radiated Measurement:**

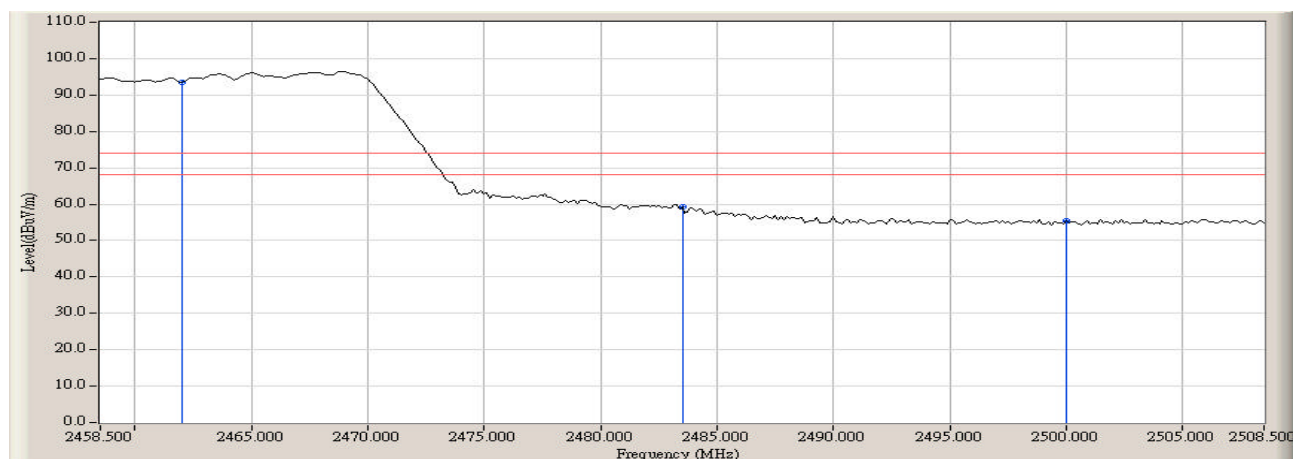
| Channel No.     | Frequency (MHz) | Required Limit (dBc) | Result |
|-----------------|-----------------|----------------------|--------|
| 11 (Horizontal) | >2483.5         | >20                  | Pass   |

**RF Radiated Measurement (Horizontal):**

| Channel No. | Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | Peak Limit (dBuV/m) | Average Limit (dBuV/m) | Result |
|-------------|-----------------|---------------------|----------------------|-------------------------|---------------------|------------------------|--------|
| 11 (Peak)   | 2483.500        | -1.896              | 61.297               | 59.402                  | 74.00               | 54.00                  | Pass   |
| 11(Average) | 2483.500        | -1.896              | 44.216               | 42.321                  | 74.00               | 54.00                  | Pass   |

**Figure Channel 11:**

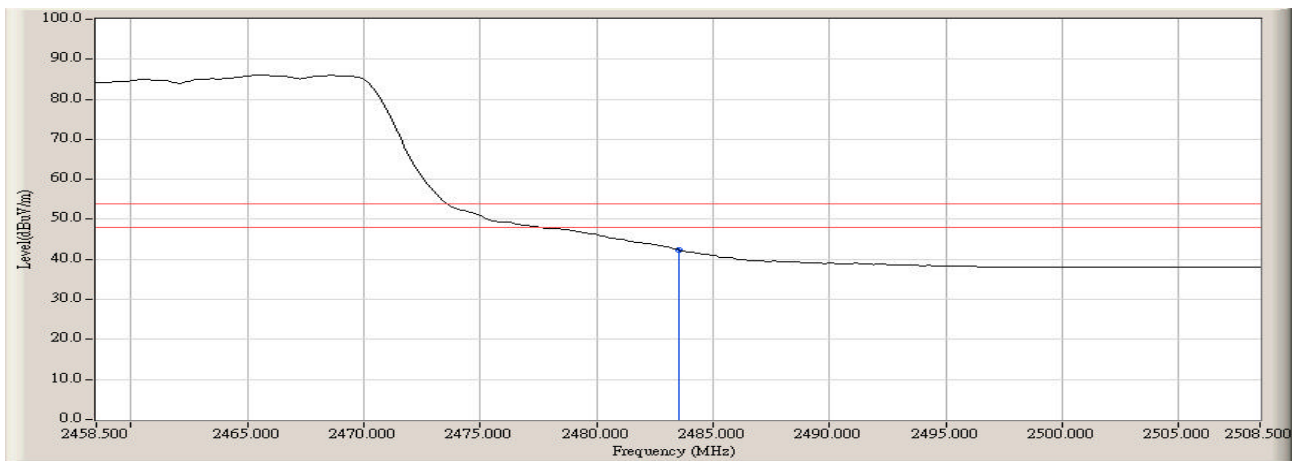
**Horizontal (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1:

Horizontal (Average)



Note: RBW=1MHz, VBW=1kHz, Sweep=500ms

Product : Wireless Thin Client  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

**RF Radiated Measurement:**

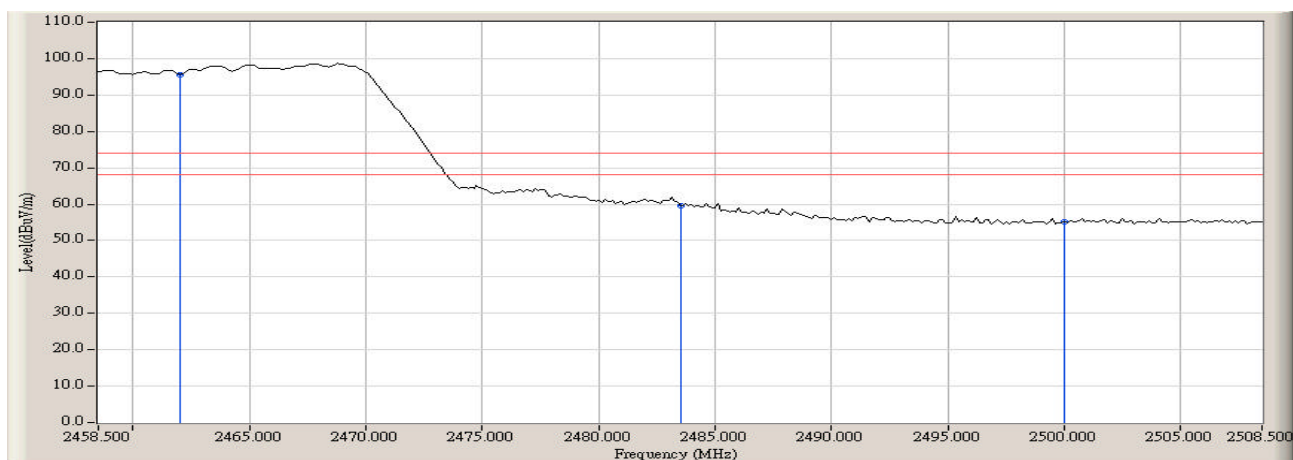
| Channel No.   | Frequency (MHz) | Required Limit (dBc) | Result |
|---------------|-----------------|----------------------|--------|
| 11 (Vertical) | >2483.5         | >20                  | Pass   |

**RF Radiated Measurement (Vertical):**

| Channel No. | Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | Peak Limit (dBuV/m) | Average Limit (dBuV/m) | Result |
|-------------|-----------------|---------------------|----------------------|-------------------------|---------------------|------------------------|--------|
| 11 (Peak)   | 2483.500        | -1.896              | 61.500               | 59.605                  | 74.00               | 54.00                  | Pass   |
| 11(Average) | 2483.500        | -1.896              | 45.461               | 43.566                  | 74.00               | 54.00                  | Pass   |

**Figure Channel 11:**

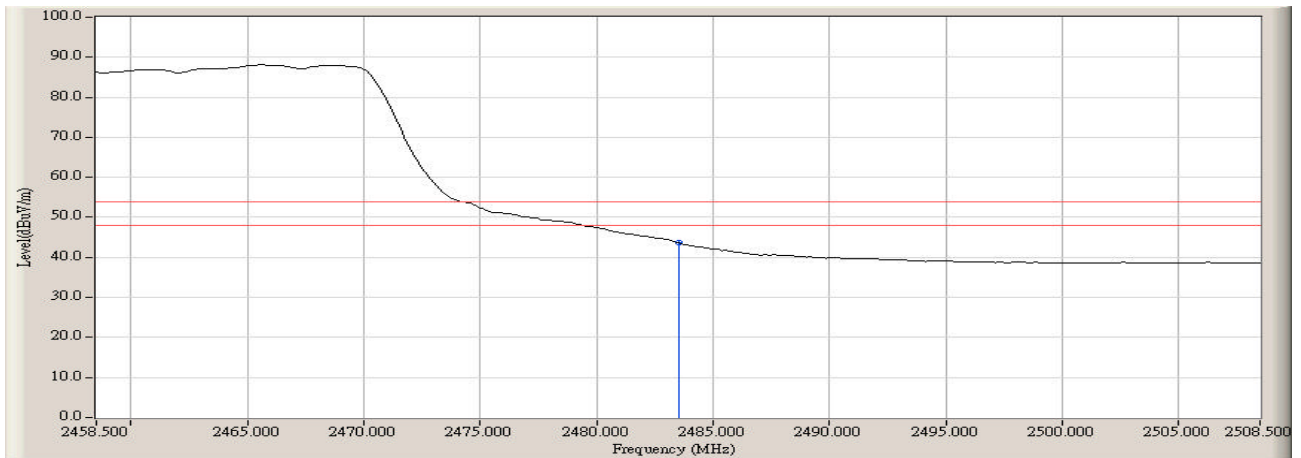
**Vertical (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 11:

Vertical (Average)



Note: RBW=1MHz, VBW=1kHz, Sweep=500ms

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

## 6. Occupied Bandwidth

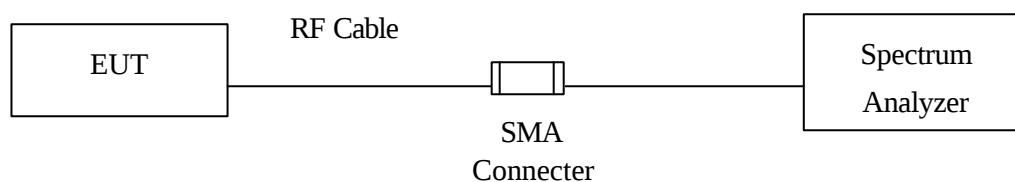
### 6.1. Test Equipment

The following test equipments are used during the radiated emission tests:

| Equipment       | Manufacturer | Model No./Serial No.  | Last Cal. |
|-----------------|--------------|-----------------------|-----------|
| X Test Receiver | R & S        | ESI 26 / 838786 / 004 | May, 2006 |

Note: 1. All instruments are calibrated every one year.  
2. The test instruments marked by “X” are used to measure the final test results.

### 6.2. Test Setup



### 6.3. Limits

N/A

### 6.4. Uncertainty

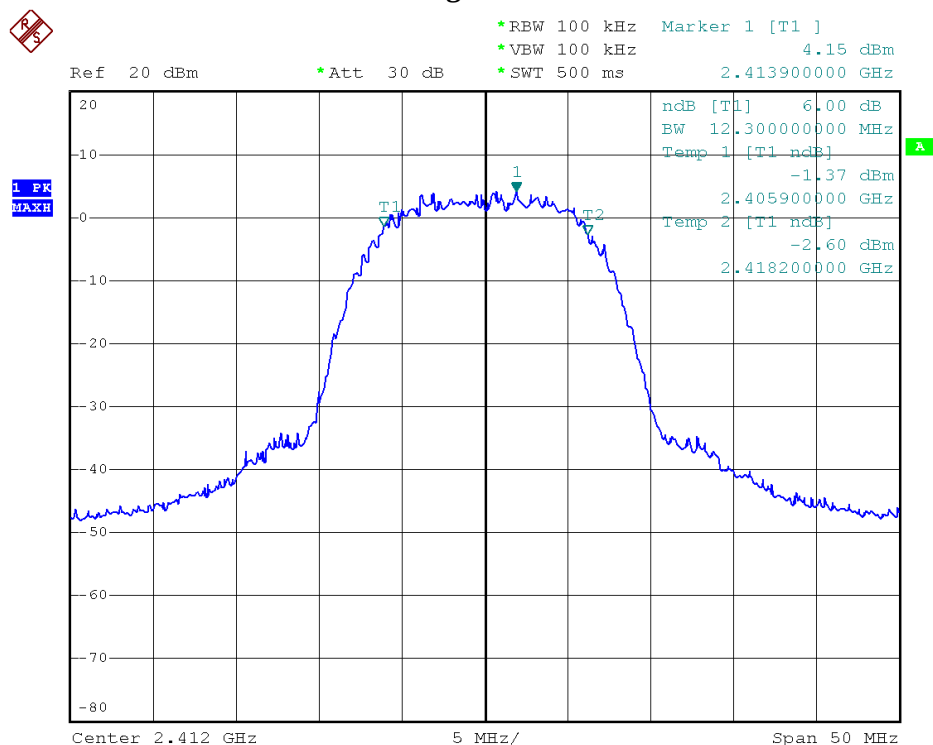
$\pm 150\text{Hz}$

## 6.5. Test Result of Occupied Bandwidth

Product : Wireless Thin Client  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2412MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 1 (11Mbps)  | 2412.00         | 12300                   | >500                 | Pass   |

Figure Channel 1:



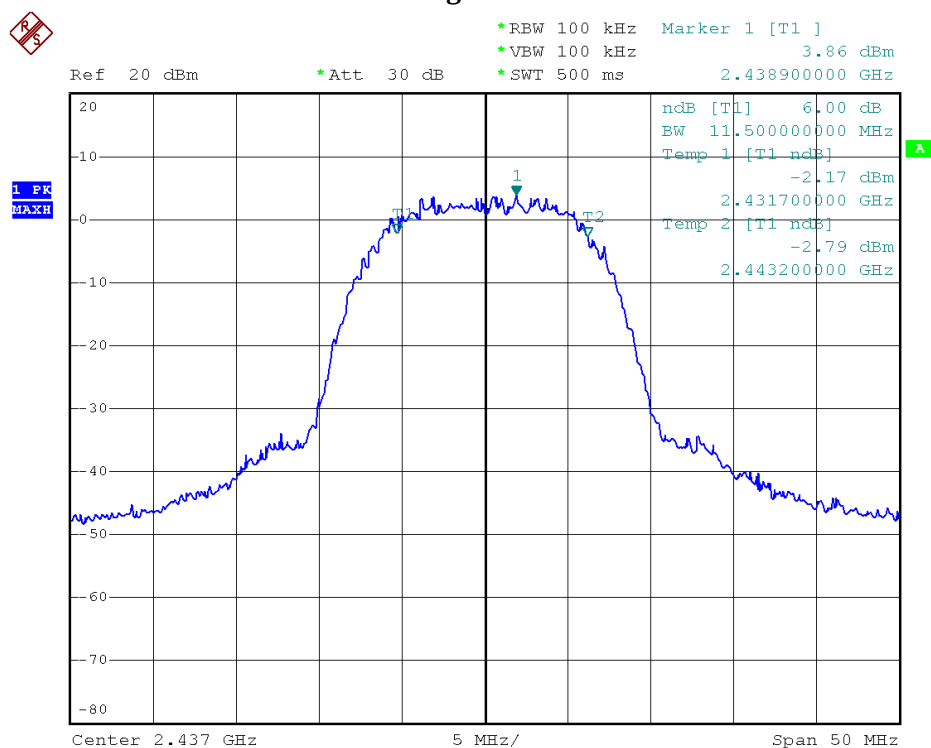
PN1

Date: 18.DEC.2006 15:55:53

Product : Wireless Thin Client  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 (11Mbps)  | 2437.00         | 11500                   | >500                 | Pass   |

Figure Channel 6:



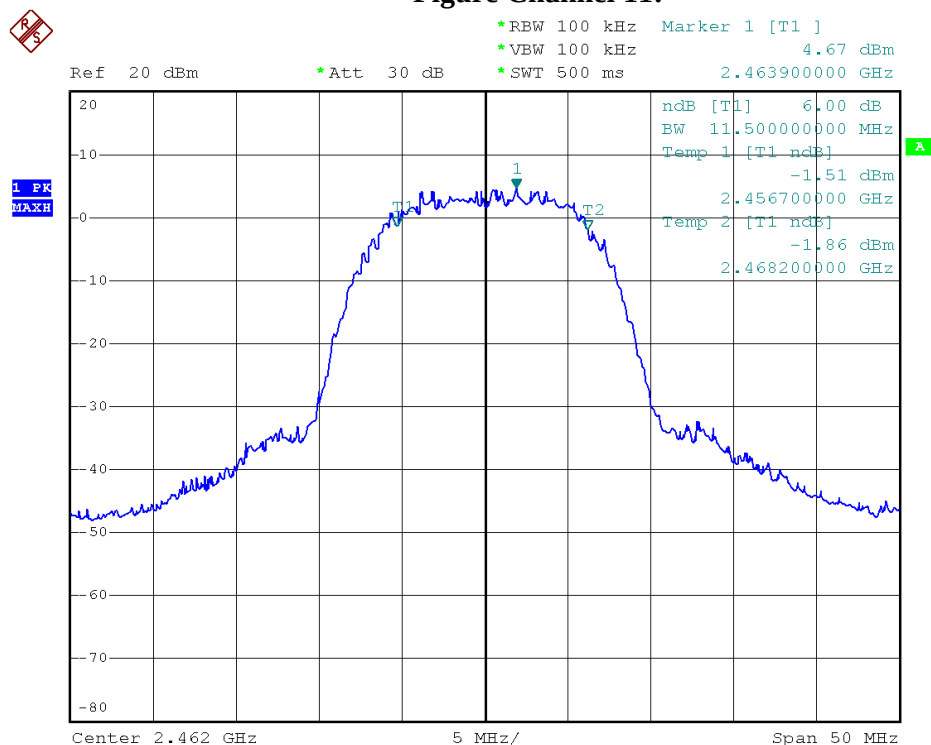
PN1

Date: 18.DEC.2006 15:57:08

Product : Wireless Thin Client  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 11 (11Mbps) | 2462.00         | 11500                   | >500                 | Pass   |

Figure Channel 11:



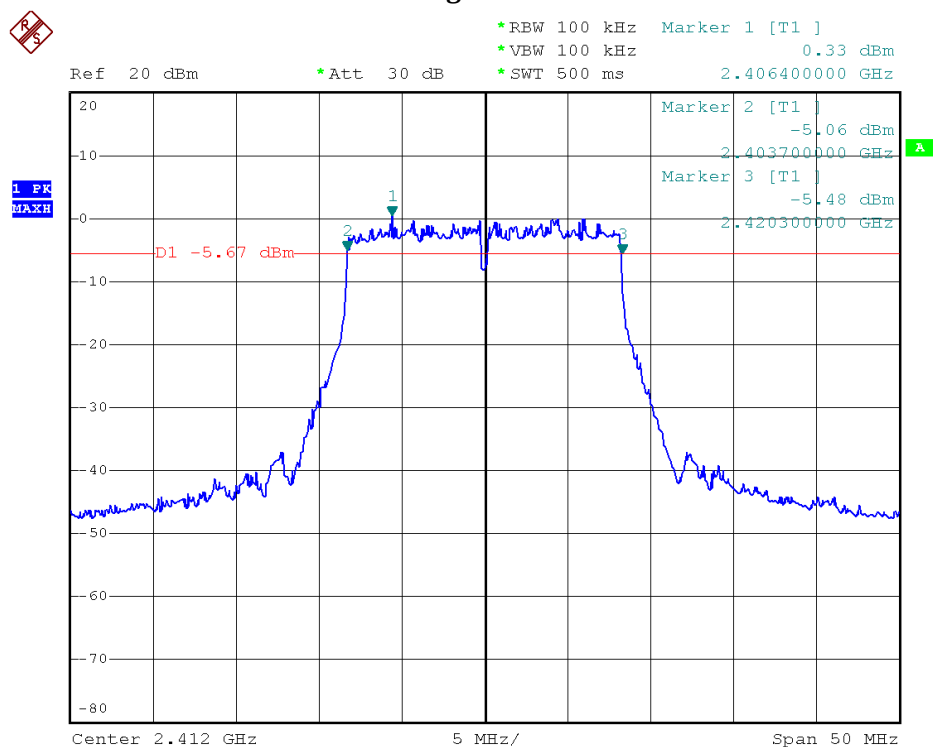
PN1

Date: 18.DEC.2006 15:57:59

Product : Wireless Thin Client  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2412MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 1 (54Mbps)  | 2412.00         | 16600                   | >500                 | Pass   |

Figure Channel 1:



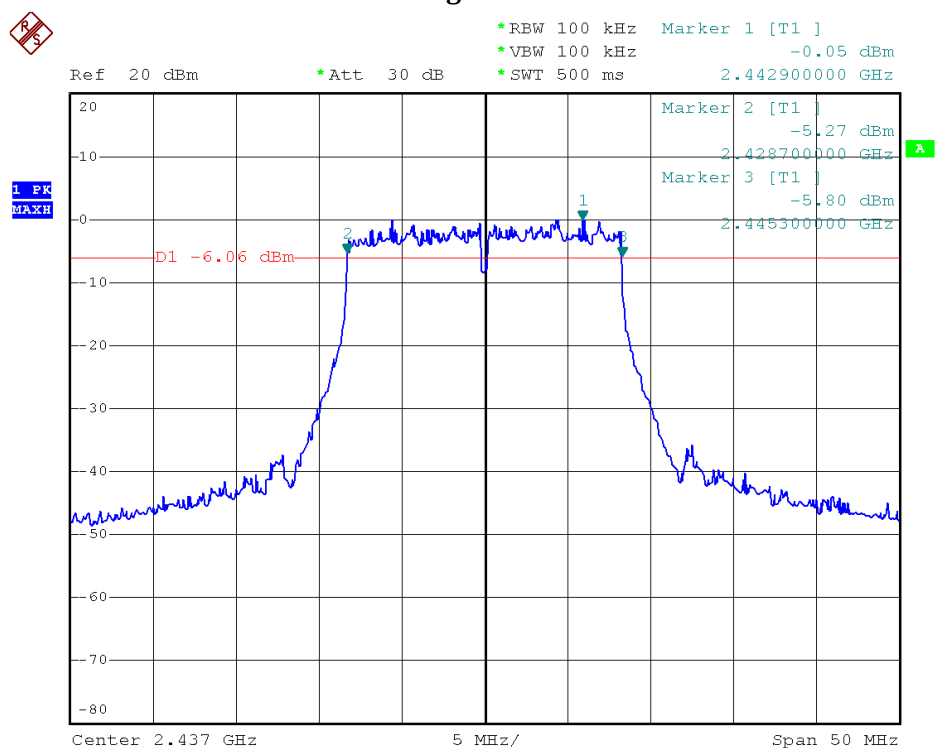
PN1

Date: 18.DEC.2006 16:02:33

Product : Wireless Thin Client  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 (54Mbps)  | 2437.00         | 16600                   | >500                 | Pass   |

Figure Channel 6:



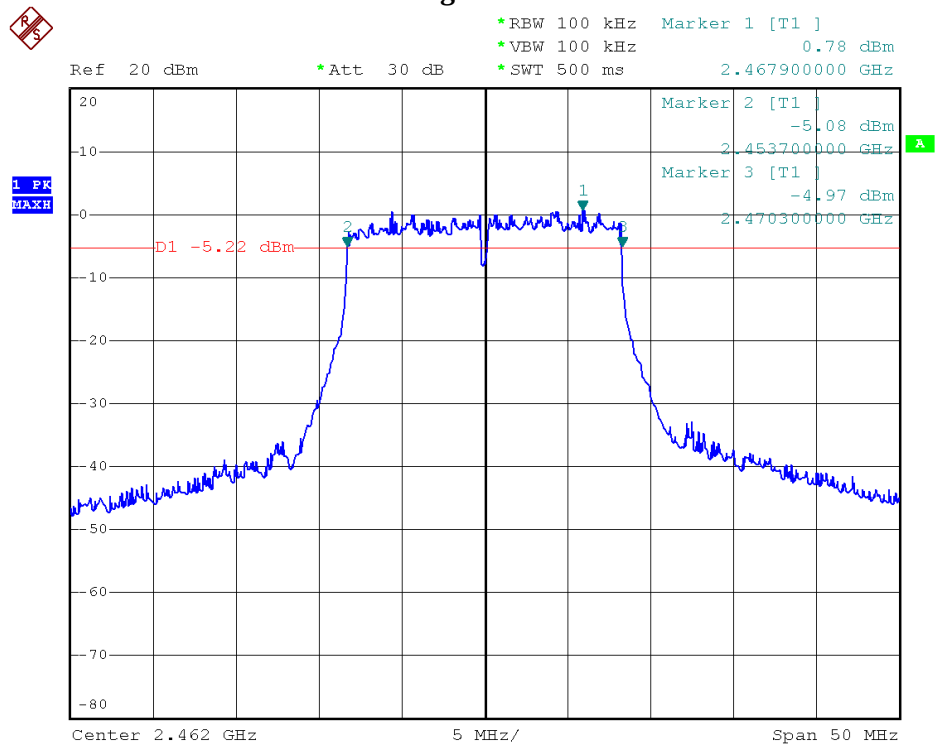
PN1

Date: 18.DEC.2006 16:03:59

Product : Wireless Thin Client  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 11 (54Mbps) | 2462.00         | 16600                   | >500                 | Pass   |

Figure Channel 11:



PN1

Date: 18.DEC.2006 16:05:24

## 7. Power Density

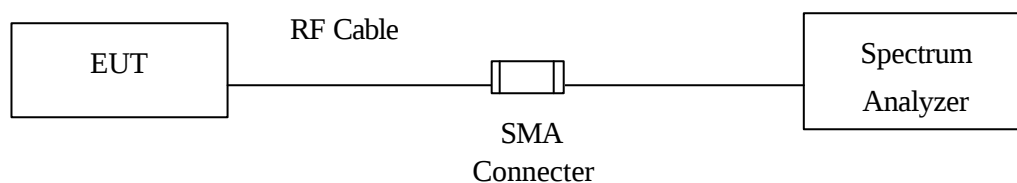
### 7.1. Test Equipment

The following test equipments are used during the radiated emission tests:

| Equipment       | Manufacturer | Model No./Serial No.  | Last Cal. |
|-----------------|--------------|-----------------------|-----------|
| X Test Receiver | R & S        | ESI 26 / 838786 / 004 | May, 2006 |

Note: 1. All equipments are calibrated every one year.  
2. The test instruments marked by “X” are used to measure the final test results.

### 7.2. Test Setup



### 7.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

### 7.4. Uncertainty

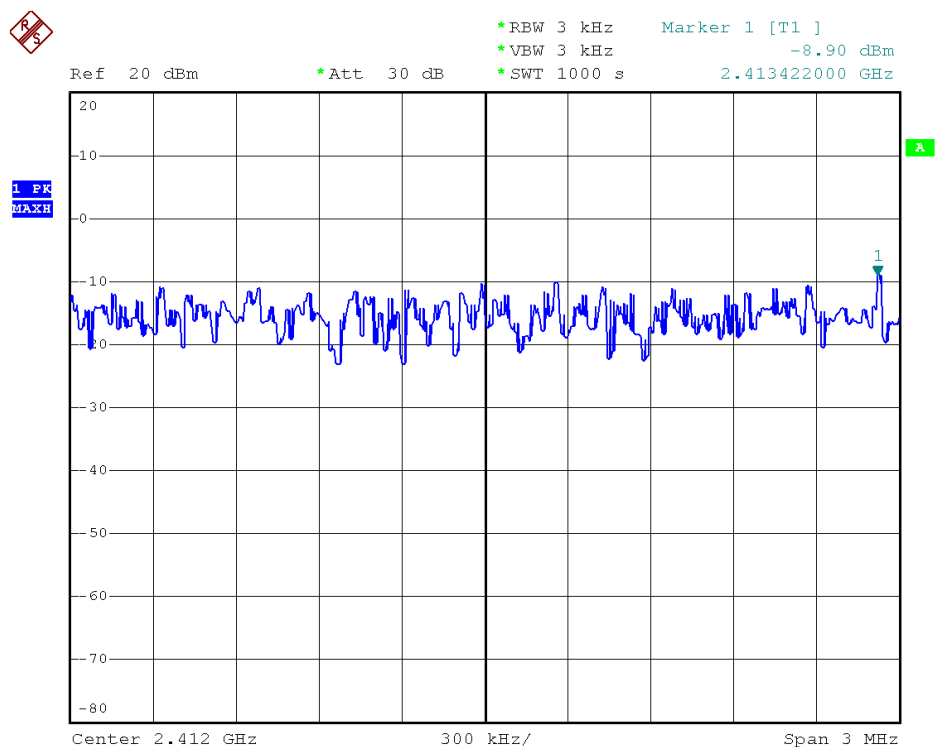
$\pm 1.27$  dB

## 7.5. Test Result of Power Density

Product : Wireless Thin Client  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2412MHz)

| Channel No. | Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Result |
|-------------|-----------------|---------------------|-------------|--------|
| 1 (11Mbps)  | 2412.00         | -8.90               | < 8dBm      | Pass   |

Figure Channel 1:



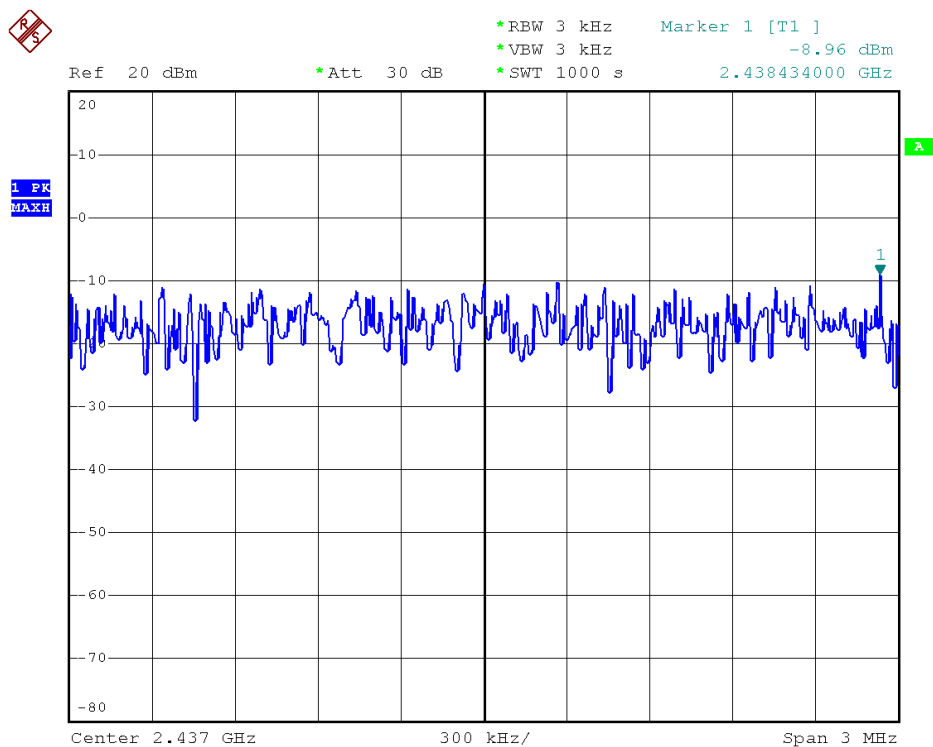
PN1

Date: 18.DEC.2006 16:44:55

Product : Wireless Thin Client  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 (11Mbps)  | 2437.000        | -8.96                   | < 8dBm               | Pass   |

Figure Channel 6:



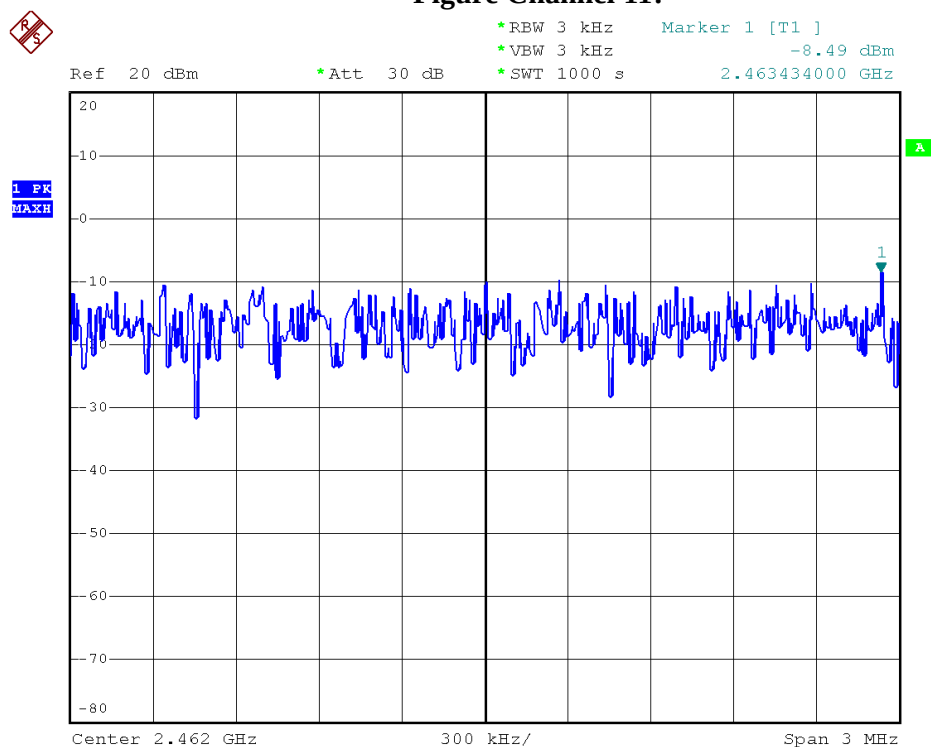
PN1

Date: 18.DEC.2006 17:21:00

Product : Wireless Thin Client  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 11 (11Mbps) | 2462.00         | -8.49                   | < 8dBm               | Pass   |

Figure Channel 11:



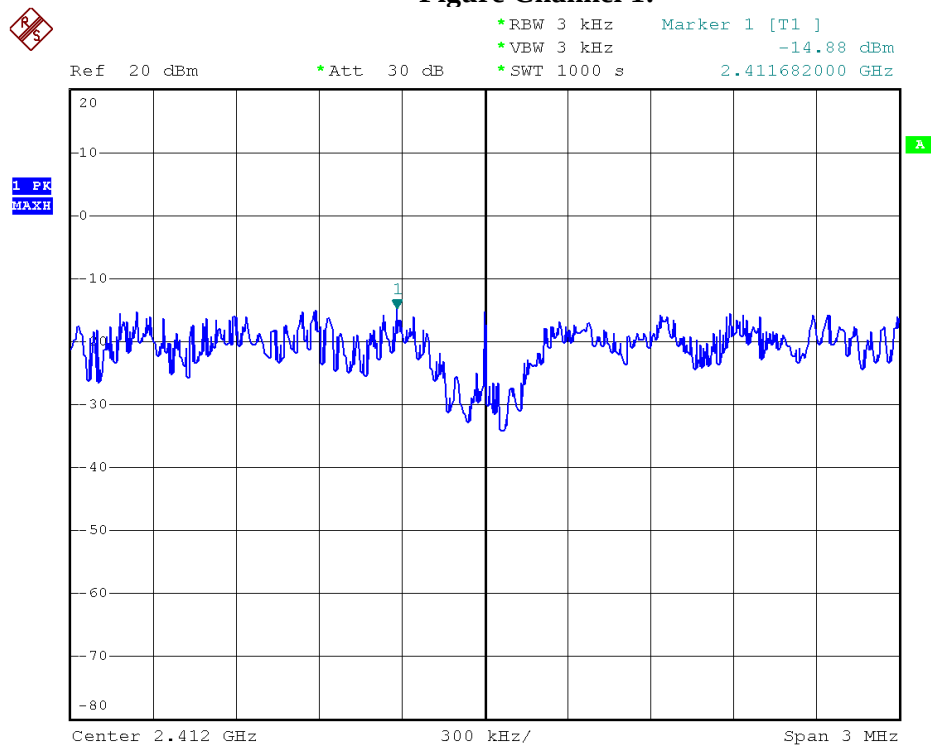
PN1

Date: 18.DEC.2006 17:59:12

Product : Wireless Thin Client  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2412MHz)

| Channel No. | Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Result |
|-------------|-----------------|---------------------|-------------|--------|
| 1 (54Mbps)  | 2412.00         | -14.88              | < 8dBm      | Pass   |

Figure Channel 1:



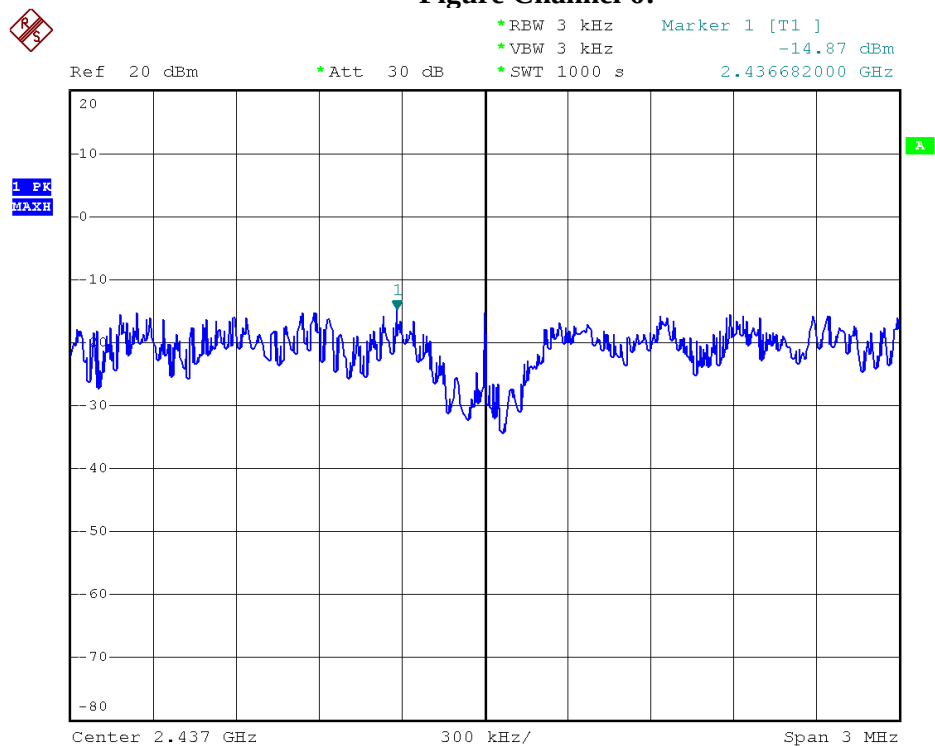
PN1

Date: 18.DEC.2006 19:15:06

Product : Wireless Thin Client  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 (54Mbps)  | 2437.000        | -14.87                  | < 8dBm               | Pass   |

Figure Channel 6:



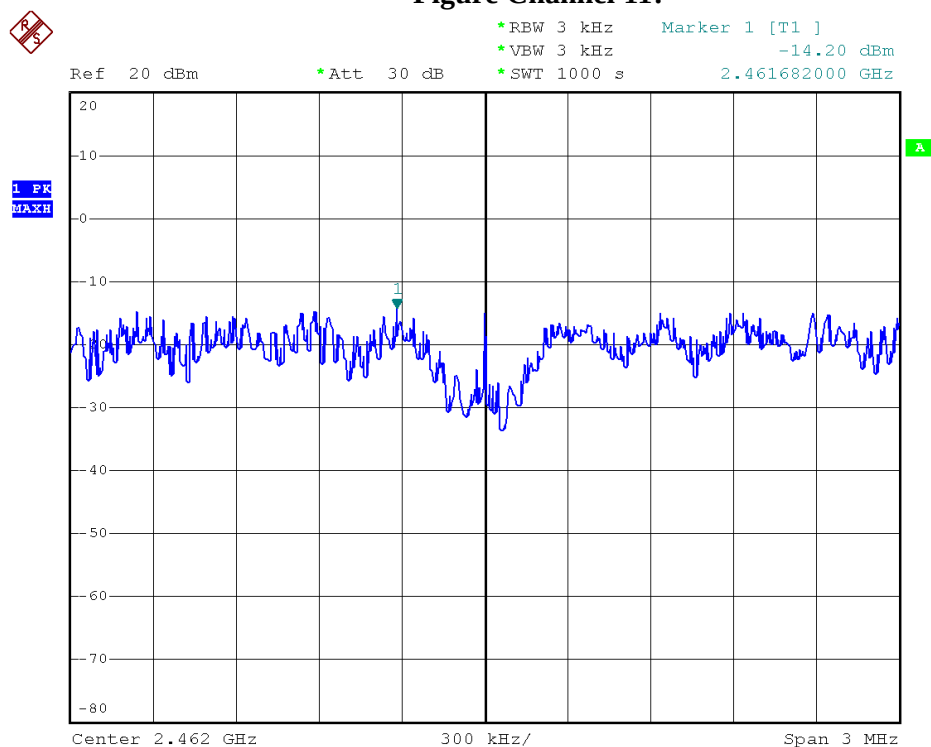
PN1

Date: 18.DEC.2006 19:51:21

Product : Wireless Thin Client  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 11 (54Mbps) | 2462.00         | -14.20                  | < 8dBm               | Pass   |

Figure Channel 11:



PN1

Date: 18.DEC.2006 20:26:48

## **8. EMI Reduction Method During Compliance Testing**

No modification was made during testing.