

# FCC TEST REPORT

**REPORT NO.:** RF950901H10

**MODEL NO.:** PePLink Surf 200BG, PePLink Surf 200BG-AP

**RECEIVED:** Sep. 01, 2006

**TESTED:** Sep. 01 to 15, 2006

**ISSUED:** Sep. 26, 2006

**APPLICANT:** PePLink Ltd.

**ADDRESS:** 2302, Tai Tung Building 8 Fleming Road,  
Wanchai, Hong Kong

**ISSUED BY:** Advance Data Technology Corporation

**LAB LOCATION:** No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen,  
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## Table of Contents

|       |                                                          |    |
|-------|----------------------------------------------------------|----|
| 1     | CERTIFICATION .....                                      | 4  |
| 2     | SUMMARY OF TEST RESULTS .....                            | 5  |
| 3     | GENERAL INFORMATION .....                                | 6  |
| 3.1   | GENERAL DESCRIPTION OF EUT .....                         | 6  |
| 3.2   | DESCRIPTION OF TEST MODES .....                          | 8  |
| 3.3   | TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL: ..... | 9  |
| 3.4   | GENERAL DESCRIPTION OF APPLIED STANDARDS.....            | 11 |
| 3.5   | DESCRIPTION OF SUPPORT UNITS .....                       | 12 |
| 3.6   | CONFIGURATION OF SYSTEM UNDER TEST .....                 | 13 |
| 4     | TEST TYPES AND RESULTS .....                             | 14 |
| 4.1   | CONDUCTED EMISSION MEASUREMENT .....                     | 14 |
| 4.1.1 | LIMITS OF CONDUCTED EMISSION MEASUREMENT .....           | 14 |
| 4.1.2 | TEST INSTRUMENTS.....                                    | 14 |
| 4.1.3 | TEST PROCEDURES .....                                    | 15 |
| 4.1.4 | TEST SETUP .....                                         | 15 |
| 4.1.5 | EUT OPERATING CONDITIONS .....                           | 16 |
| 4.1.6 | TEST RESULTS .....                                       | 17 |
| 4.2   | RADIATED EMISSION MEASUREMENT .....                      | 19 |
| 4.2.1 | LIMITS OF RADIATED EMISSION MEASUREMENT .....            | 19 |
| 4.2.2 | TEST INSTRUMENTS.....                                    | 20 |
| 4.2.3 | TEST PROCEDURES .....                                    | 21 |
| 4.2.4 | TEST SETUP .....                                         | 22 |
| 4.2.5 | EUT OPERATING CONDITIONS .....                           | 22 |
| 4.2.6 | TEST RESULTS .....                                       | 23 |
| 4.2.7 | TEST RESULTS - DSSS .....                                | 24 |
| 4.2.8 | TEST RESULTS - OFDM .....                                | 31 |
| 4.3   | 6dB BANDWIDTH MEASUREMENT.....                           | 38 |
| 4.3.1 | LIMITS OF 6dB BANDWIDTH MEASUREMENT .....                | 38 |
| 4.3.2 | TEST INSTRUMENTS.....                                    | 38 |
| 4.3.3 | TEST PROCEDURE.....                                      | 39 |
| 4.3.4 | TEST SETUP .....                                         | 39 |
| 4.3.5 | EUT OPERATING CONDITIONS .....                           | 39 |
| 4.3.6 | TEST RESULTS –DSSS.....                                  | 40 |
| 4.3.7 | TEST RESULTS-OFDM .....                                  | 43 |
| 4.4   | MAXIMUM PEAK OUTPUT POWER .....                          | 46 |
| 4.4.1 | LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT .....    | 46 |
| 4.4.2 | TEST INSTRUMENTS.....                                    | 46 |
| 4.4.3 | TEST PROCEDURES .....                                    | 47 |
| 4.4.4 | TEST SETUP .....                                         | 47 |

|       |                                                               |     |
|-------|---------------------------------------------------------------|-----|
| 4.4.5 | EUT OPERATING CONDITIONS .....                                | 47  |
| 4.4.6 | TEST RESULTS – DSSS.....                                      | 48  |
| 4.4.7 | TEST RESULTS –OFDM.....                                       | 49  |
| 4.5   | POWER SPECTRAL DENSITY MEASUREMENT .....                      | 50  |
| 4.5.1 | LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT.....             | 50  |
| 4.5.2 | TEST INSTRUMENTS.....                                         | 50  |
| 4.5.3 | TEST PROCEDURE.....                                           | 51  |
| 4.5.4 | TEST SETUP .....                                              | 51  |
| 4.5.5 | EUT OPERATING CONDITIONS .....                                | 51  |
| 4.5.6 | TEST RESULTS –DSSS.....                                       | 52  |
| 4.5.7 | TEST RESULTS –OFDM.....                                       | 55  |
| 4.6   | CONDUCTED EMISSION AND BAND EDGES MEASUREMENT .....           | 58  |
| 4.6.1 | LIMITS OF conducted emission and BAND EDGES MEASUREMENT ..... | 58  |
| 4.6.2 | TEST INSTRUMENTS.....                                         | 58  |
| 4.6.3 | TEST PROCEDURE.....                                           | 58  |
| 4.6.4 | DEVIATION FROM TEST STANDARD.....                             | 58  |
| 4.6.5 | EUT OPERATING CONDITION.....                                  | 58  |
| 4.6.6 | TEST RESULTS .....                                            | 59  |
| 4.7   | ANTENNA REQUIREMENT .....                                     | 64  |
| 4.7.1 | STANDARD APPLICABLE .....                                     | 64  |
| 4.7.2 | ANTENNA CONNECTED CONSTRUCTION .....                          | 64  |
| 5     | PHOTOGRAPHS OF THE TEST CONFIGURATION.....                    | 65  |
| 6     | INFORMATION ON THE TESTING LABORATORIES .....                 | 67  |
|       | APPENDIX-A.....                                               | A-1 |

## 1 CERTIFICATION

**PRODUCT :** PePLink Surf 200BG, PePLink Surf 200BG-AP  
**BRAND NAME :** PePLink  
**MODEL NO. :** PePLink Surf 200BG, PePLink Surf 200BG-AP  
**TESTED:** Sep. 01 to 15, 2006  
**APPLICANT :** PePLink Ltd.  
**TEST ITEM:** MASS-PRODUCTION  
**STANDARDS :** 47 CFR Part 15, Subpart C (Section 15.247),  
ANSI C63.4-2003

The above equipment (Model: PePLink Surf 200BG) has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY :** Carol Liao , **DATE:** Sep. 26, 2006  
( Carol Liao )

**TECHNICAL**  
**ACCEPTANCE :** Hank Chung , **DATE:** Sep. 26, 2006  
Responsible for RF ( Hank Chung )

**APPROVED BY :** May Chen , **DATE:** Sep. 26, 2006  
( May Chen, Deputy Manager )

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: 47 CFR Part 15, Subpart C |                                                                                         |        |                                                                                   |
|---------------------------------------------|-----------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|
| Standard Section                            | Test Type and Limit                                                                     | Result | REMARK                                                                            |
| 15.207                                      | AC Power Conducted Emission                                                             | PASS   | Meet the requirement of limit<br>Minimum passing margin is -19.71 dB at 2.306 MHz |
| 15.247(a)(2)                                | Spectrum Bandwidth of a Direct Sequence Spread Spectrum System<br>Limit: min. 500kHz    | PASS   | Meet the requirement of limit                                                     |
| 15.247(b)                                   | Maximum Peak Output Power<br>Limit: max. 30dBm                                          | PASS   | Meet the requirement of limit                                                     |
| 15.247(c)                                   | Transmitter Radiated Emissions<br>Limit: Table 15.209                                   | PASS   | Meet the requirement of limit<br>Minimum passing margin is -0.2 dB at 2386.0 MHz  |
| 15.247(d)                                   | Power Spectral Density<br>Limit: max. 8dBm                                              | PASS   | Meet the requirement of limit                                                     |
| 15.247(c)                                   | Band Edge Measurement<br>Limit: 20 dB less than the peak value of fundamental frequency | PASS   | Meet the requirement of limit                                                     |

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

|                           |                                                                 |
|---------------------------|-----------------------------------------------------------------|
| <b>PRODUCT</b>            | PePLink Surf 200BG, PePLink Surf 200BG-AP                       |
| <b>MODEL NO.</b>          | PePLink Surf 200BG, PePLink Surf 200BG-AP                       |
| <b>FCC ID</b>             | SAN-SURF200BG-C                                                 |
| <b>POWER SUPPLY</b>       | DC 5V from power adapter                                        |
| <b>MODULATION TYPE</b>    | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM |
| <b>RADIO TECHNOLOGY</b>   | DSSS, OFDM                                                      |
| <b>TRANSFER RATE</b>      | 802.11b: 11/5.5/2/1Mbps<br>802.11g: 54/48/36/24/18/12/9/6Mbps   |
| <b>FREQUENCY RANGE</b>    | 2412MHz ~ 2462MHz                                               |
| <b>NUMBER OF CHANNEL</b>  | 11                                                              |
| <b>CHANNEL SPACING</b>    | 5MHz                                                            |
| <b>OUTPUT POWER</b>       | 802.11b: 65.313mW<br>802.11g: 133.045mW                         |
| <b>ANTENNA TYPE</b>       | Please see note 2 (on next page)                                |
| <b>DATA CABLE</b>         | NA                                                              |
| <b>I/O PORTS</b>          | LAN Port x 1                                                    |
| <b>ASSOCIATED DEVICES</b> | NA                                                              |

**Note :**

- The EUT has two product names and model names, which are identical to each other in all aspects except for the followings:

| Product name          | Model name            | Difference                |
|-----------------------|-----------------------|---------------------------|
| PePLink Surf 200BG    | PePLink Surf 200BG    | For marketing requirement |
| PePLink Surf 200BG-AP | PePLink Surf 200BG-AP |                           |

From the above models, model: **PePLink Surf 200BG** was selected as representative model for the test and its data was recorded in this report.

2. There are two antennas provided to this EUT as below:

| No.: | Antenna Type   | Gain (dBi) | Cable loss (dB) | Net Gain (dBi) | Connector Type |
|------|----------------|------------|-----------------|----------------|----------------|
| 1    | Dipole Antenna | 9          | 0.7             | 8.3            | Reverse SMA    |
| 2    | Dipole Antenna | 5          | 0.7             | 4.3            | Reverse SMA    |

From the above antennas, **antenna 1** was selected as representative antenna for the test and its data was recorded in this report.

3. The EUT must be supplied with following power adapter:

|                |                          |
|----------------|--------------------------|
| Brand:         | SWITCHING                |
| Model No.:     | S024AU0500300            |
| Input power :  | 100-240V ~ 47-63Hz 700mA |
| Output power : | 5V=== 3000mA             |

4. The EUT, operates in the 2.4GHz frequency range, lets you connect IEEE 802.11g or IEEE 802.11b devices to the network. With its high-speed data transmissions of up to 54Mbps.

5. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

### 3.2 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

For 802.11b/g normal mode: Eleven channels are provided to this EUT.

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

### 3.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

| EUT configure mode | Applicable to |       |       |      | Description |
|--------------------|---------------|-------|-------|------|-------------|
|                    | PLC           | RE<1G | RE≥1G | APCM |             |
| -                  | √             | √     | √     | √    | NA          |

Where PLC: Power Line Conducted Emission

RE<1G RE: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

#### **Power Line Conducted Emission Test:**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| Mode    | Available Channel | Tested Channel | Modulation Technology | Modulation Type | Data Rate (Mbps) |
|---------|-------------------|----------------|-----------------------|-----------------|------------------|
| 802.11b | 1 to 11           | 1              | DSSS                  | CCK             | 1                |

#### **Radiated Emission Test (Below 1 GHz):**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| Mode    | Available Channel | Tested Channel | Modulation Technology | Modulation Type | Data Rate (Mbps) |
|---------|-------------------|----------------|-----------------------|-----------------|------------------|
| 802.11b | 1 to 11           | 1              | DSSS                  | CCK             | 1                |

#### **Radiated Emission Test (Above 1 GHz):**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| Mode    | Available Channel | Tested Channel | Modulation Technology | Modulation Type | Data Rate (Mbps) |
|---------|-------------------|----------------|-----------------------|-----------------|------------------|
| 802.11b | 1 to 11           | 1, 6, 11       | DSSS                  | CCK             | 1                |
| 802.11g | 1 to 11           | 1, 6, 11       | OFDM                  | BPSK            | 6                |

**Bandedge Measurement:**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| Mode    | Available Channel | Tested Channel | Modulation Technology | Modulation Type | Data Rate (Mbps) |
|---------|-------------------|----------------|-----------------------|-----------------|------------------|
| 802.11b | 1 to 11           | 1, 11          | DSSS                  | CCK             | 1                |
| 802.11g | 1 to 11           | 1, 11          | OFDM                  | BPSK            | 6                |

**Antenna Port Conducted Measurement:**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| Mode    | Available Channel | Tested Channel | Modulation Technology | Modulation Type | Data Rate (Mbps) |
|---------|-------------------|----------------|-----------------------|-----------------|------------------|
| 802.11b | 1 to 11           | 1, 6, 11       | DSSS                  | CCK             | 1                |
| 802.11g | 1 to 11           | 1, 6, 11       | OFDM                  | BPSK            | 6                |

### **3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a PePLink Surf 200BG, PePLink Surf 200BG-AP. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**47 CFR Part 15, Subpart C. (15.247)**  
**ANSI C63.4 : 2003**

All tests have been performed and recorded as per the above standards.

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of 47 CFR Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

### 3.5 DESCRIPTION OF SUPPORT UNITS

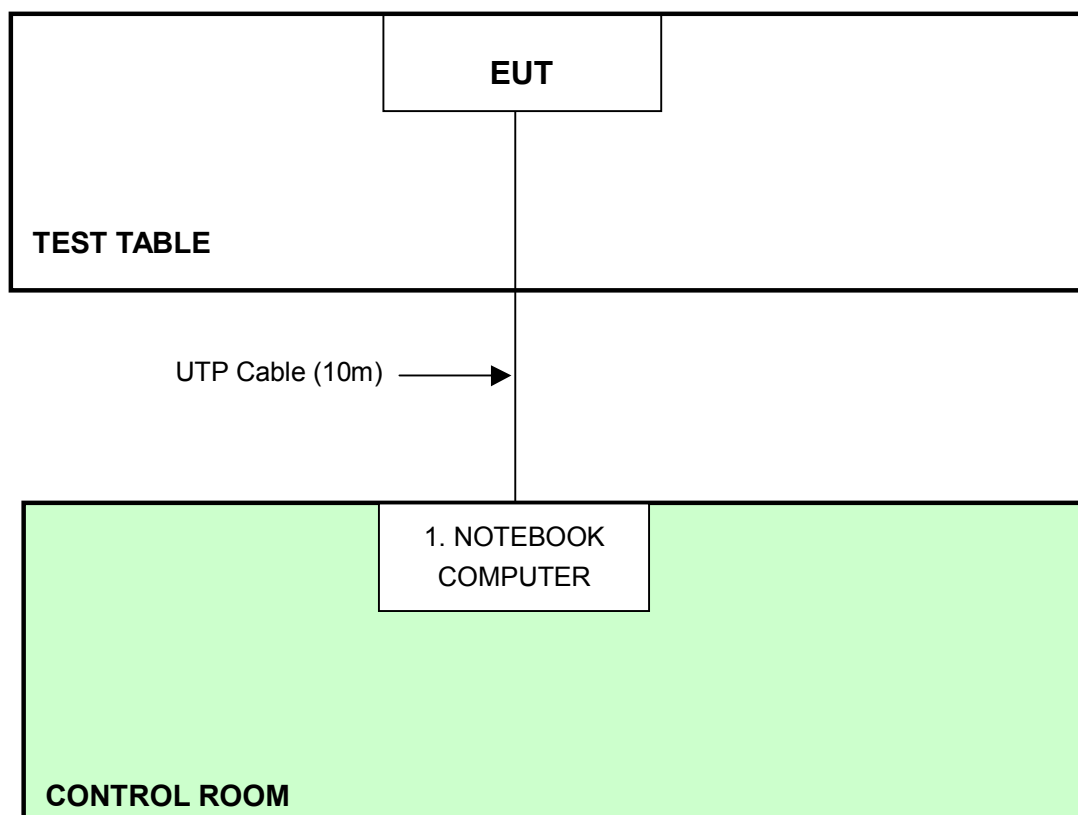
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| NO. | PRODUCT              | BRAND | MODEL NO. | SERIAL NO.                   | FCC ID |
|-----|----------------------|-------|-----------|------------------------------|--------|
| 1   | NOTEBOOK<br>COMPUTER | DELL  | PP05L     | CN-04Y212-48643-<br>38E-0145 | DoC    |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|-----|-----------------------------------------------------|
| 1   | NA                                                  |

**NOTE:** All power cords of the above support units are non shielded (1.8m).

### 3.6 CONFIGURATION OF SYSTEM UNDER TEST



**NOTE:** 1. Support unit 1 was kept in the control room during the test.  
2. Please refer to the photos of test configuration in Item 5 also.

## 4 TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

| FREQUENCY OF EMISSION (MHz) | CONDUCTED LIMIT (dBμV) |          |
|-----------------------------|------------------------|----------|
|                             | Quasi-peak             | Average  |
| 0.15-0.5                    | 66 to 56               | 56 to 46 |
| 0.5-5                       | 56                     | 46       |
| 5-30                        | 60                     | 50       |

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. All emanations from a class B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

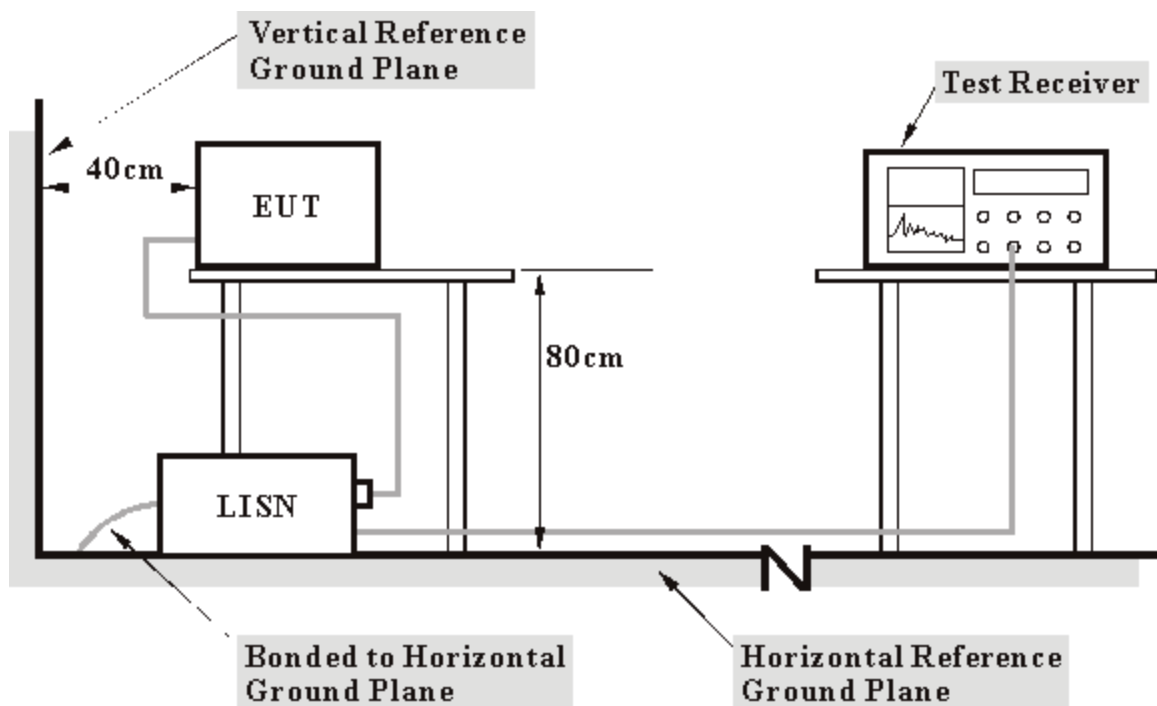
| DESCRIPTION & MANUFACTURER                           | MODEL NO.       | SERIAL NO.  | CALIBRATED UNTIL |
|------------------------------------------------------|-----------------|-------------|------------------|
| Test Receiver                                        | ESCS 30         | 847124/029  | Dec. 15, 2006    |
| Line-Impedance Stabilization Network(for EUT)        | ENV-216         | 100071      | Nov. 10, 2006    |
| Line-Impedance Stabilization Network(for Peripheral) | KNW-407         | 8/1395/12   | Jul. 18, 2007    |
| RF Cable (JETBAO)                                    | RG233/U         | Cable_CB_01 | Dec. 09, 2006    |
| Terminator                                           | 50              | 2           | Oct. 08, 2006    |
| Software                                             | ADT_Cond_V7.3.2 | NA          | NA               |

- NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in ADT Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.

#### 4.1.3 TEST PROCEDURES

- The EUT/HOST was placed 0.4 meters from the conducting wall of the shielded room with EUT/HOST being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT/HOST were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

#### 4.1.4 TEST SETUP



- Note:**
- Support units were connected to second LISN.
  - Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.1.5 EUT OPERATING CONDITIONS

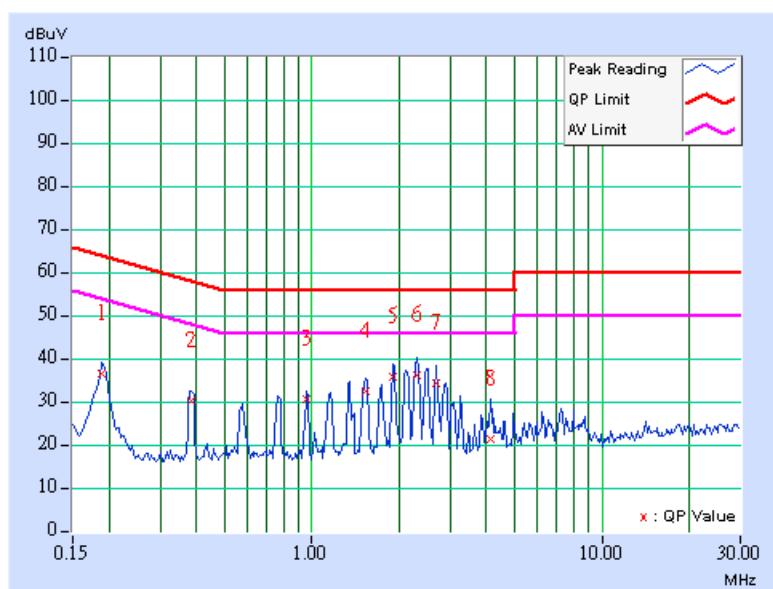
- a. Placed the EUT on the testing table.
- b. Prepared other computer system (support unit 1: Notebook computer) to act as communication partner and placed it outside of testing area.
- c. The communication partner runs test program "Internet Explorer" to enable EUT under transmission condition continuously at specific channel frequency.

#### 4.1.6 TEST RESULTS

|                                 |                         |                      |           |
|---------------------------------|-------------------------|----------------------|-----------|
| <b>MODULATION TYPE</b>          | CCK                     | <b>CHANNEL</b>       | Channel 1 |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz           | <b>6dB BANDWIDTH</b> | 9 kHz     |
| <b>ENVIRONMENTAL CONDITIONS</b> | 26deg. C, 57%RH, 962hPa | <b>TRANSFER RATE</b> | 1Mbps     |
| <b>TESTED BY</b>                | Moris Lin               | <b>PHASE</b>         | Line (L)  |

| No       | Freq.<br>[MHz] | Corr.<br>Factor<br>(dB) | Reading Value |     | Emission Level |     | Limit        |              | Margin        |     |
|----------|----------------|-------------------------|---------------|-----|----------------|-----|--------------|--------------|---------------|-----|
|          |                |                         | [dB (uV)]     |     | [dB (uV)]      |     | [dB (uV)]    |              | (dB)          |     |
|          |                |                         | Q.P.          | AV. | Q.P.           | AV. | Q.P.         | AV.          | Q.P.          | AV. |
| 1        | 0.189          | 9.60                    | 27.03         | -   | 36.63          | -   | 64.08        | 54.08        | -27.45        | -   |
| 2        | 0.384          | 9.60                    | 20.55         | -   | 30.15          | -   | 58.18        | 48.18        | -28.03        | -   |
| 3        | 0.959          | 9.60                    | 21.14         | -   | 30.74          | -   | 56.00        | 46.00        | -25.26        | -   |
| 4        | 1.529          | 9.65                    | 22.99         | -   | 32.64          | -   | 56.00        | 46.00        | -23.36        | -   |
| 5        | 1.912          | 9.69                    | 26.14         | -   | 35.83          | -   | 56.00        | 46.00        | -20.17        | -   |
| <b>6</b> | <b>2.306</b>   | <b>9.70</b>             | <b>26.59</b>  | -   | <b>36.29</b>   | -   | <b>56.00</b> | <b>46.00</b> | <b>-19.71</b> | -   |
| 7        | 2.693          | 9.70                    | 24.80         | -   | 34.50          | -   | 56.00        | 46.00        | -21.50        | -   |
| 8        | 4.117          | 9.70                    | 11.91         | -   | 21.61          | -   | 56.00        | 46.00        | -34.39        | -   |

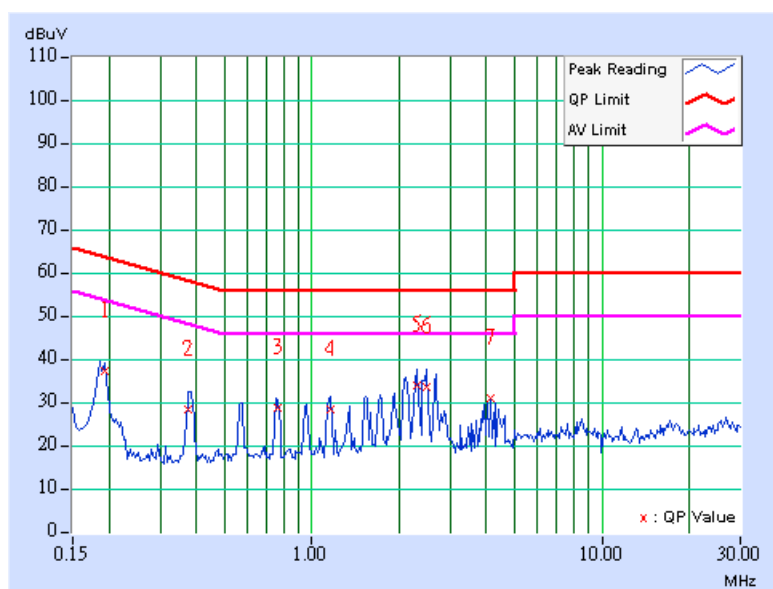
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



|                                 |                         |                      |             |
|---------------------------------|-------------------------|----------------------|-------------|
| <b>MODULATION TYPE</b>          | CCK                     | <b>CHANNEL</b>       | Channel 1   |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz           | <b>6dB BANDWIDTH</b> | 9 kHz       |
| <b>ENVIRONMENTAL CONDITIONS</b> | 26deg. C, 57%RH, 962hPa | <b>TRANSFER RATE</b> | 1Mbps       |
| <b>TESTED BY</b>                | Moris Lin               | <b>PHASE</b>         | Neutral (N) |

| No | Freq.<br>[MHz] | Corr.<br>Factor<br>(dB) | Reading Value |     | Emission Level |     | Limit     |       | Margin |     |
|----|----------------|-------------------------|---------------|-----|----------------|-----|-----------|-------|--------|-----|
|    |                |                         | [dB (uV)]     |     | [dB (uV)]      |     | [dB (uV)] |       | (dB)   |     |
|    |                |                         | Q.P.          | AV. | Q.P.           | AV. | Q.P.      | AV.   | Q.P.   | AV. |
| 1  | 0.193          | 9.60                    | 27.86         | -   | 37.46          | -   | 63.91     | 53.91 | -26.45 | -   |
| 2  | 0.377          | 9.60                    | 18.90         | -   | 28.50          | -   | 58.35     | 48.35 | -29.85 | -   |
| 3  | 0.762          | 9.60                    | 19.15         | -   | 28.75          | -   | 56.00     | 46.00 | -27.25 | -   |
| 4  | 1.158          | 9.62                    | 18.77         | -   | 28.39          | -   | 56.00     | 46.00 | -27.61 | -   |
| 5  | 2.298          | 9.70                    | 24.52         | -   | 34.22          | -   | 56.00     | 46.00 | -21.78 | -   |
| 6  | 2.474          | 9.70                    | 23.97         | -   | 33.67          | -   | 56.00     | 46.00 | -22.33 | -   |
| 7  | 4.148          | 9.70                    | 21.38         | -   | 31.08          | -   | 56.00     | 46.00 | -24.92 | -   |

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

| Frequencies (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009-0.490       | $2400/F(\text{kHz})$              | 300                           |
| 0.490-1.705       | $24000/F(\text{kHz})$             | 30                            |
| 1.705-30.0        | 30                                | 30                            |
| 30-88             | 100                               | 3                             |
| 88-216            | 150                               | 3                             |
| 216-960           | 200                               | 3                             |
| Above 960         | 500                               | 3                             |

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) =  $20 \log$  Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

## 4.2.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER    | MODEL NO.           | SERIAL NO.      | CALIBRATED UNTIL |
|-------------------------------|---------------------|-----------------|------------------|
| ADVANTEST Spectrum Analyzer   | R3271A              | 85060311        | July 03, 2007    |
| HP Pre_Amplifier              | 8449B               | 3008A01922      | Oct. 02, 2006    |
| ROHDE & SCHWARZ Test Receiver | ESCS30              | 100375          | Sep. 18, 2007    |
| CHASE Broadband Antenna       | VULB9168            | 138             | Dec. 11, 2006    |
| Schwarzbeck Horn_Antenna      | BBHA9120            | D124            | Dec. 27, 2006    |
| Schwarzbeck Horn_Antenna      | BBHA 9170           | BBHA9170153     | Jan. 05, 2007    |
| SCHWARZBECK Biconical Antenna | VHBA9123            | 459             | Jun. 08, 2009    |
| SCHWARZBECK Periodic Antenna  | UPA6108             | 1148            | Jun. 08, 2009    |
| R&S Loop Antenna              | HFH2-Z2             | 881058/15       | Nov. 29, 2007    |
| RF Switches (ARNITSU)         | CS-201              | 1565157         | NA               |
| RF CABLE (Chaintek)           | SF102               | 22054-2         | Nov. 16, 2006    |
| RF Cable(RICHTEC)             | 9913-30M N-N Cable  | STCCAB-30M-1GHz | Jul. 15, 2007    |
| Software                      | ADT_Radiated_V 5.14 | NA              | NA               |
| CHANCE MOST Antenna Tower     | AT-100              | 0203            | NA               |
| CHANCE MOST Turn Table        | TT-100              | 0203            | NA               |

- Note: 1. The calibration interval of the above test instruments is 12 months (36 months for Biconical and Periodic Antenna) and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: R3271A) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 4824A-3.
7. The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

| Measurement                       | Value   |
|-----------------------------------|---------|
| Radiated emissions (30MHz-1GHz)   | 2.98 dB |
| Radiated emissions (1GHz ~18GHz)  | 2.21 dB |
| Radiated emissions (18GHz ~40GHz) | 1.88 dB |

8. Loop antenna was used for all emissions below 30 MHz. (FOR Loop antenna only)

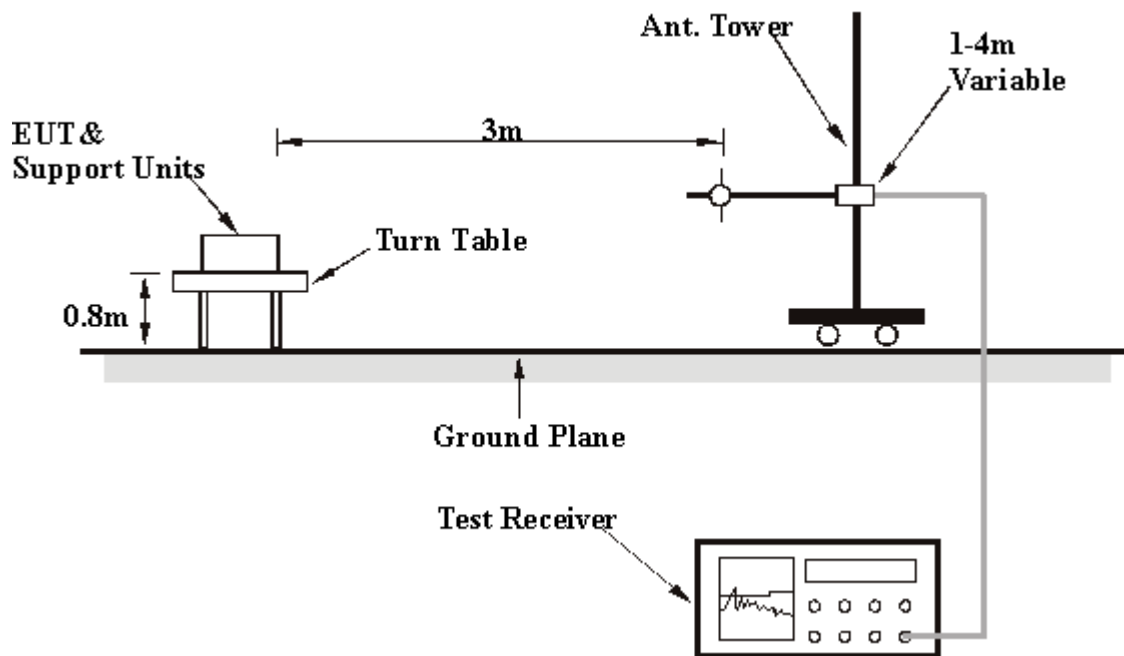
#### 4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

#### 4.2.4 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.2.5 EUT OPERATING CONDITIONS

Same as 4.1.5

#### 4.2.6 TEST RESULTS

##### Below 1GHz Worst-Case Data

|                                 |                         |                        |             |
|---------------------------------|-------------------------|------------------------|-------------|
| <b>MODULATION TYPE</b>          | CCK                     | <b>CHANNEL</b>         | Channel 1   |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz           | <b>FREQUENCY RANGE</b> | 30-1000 MHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 27deg. C, 59%RH, 962hPa | <b>TRANSFER RATE</b>   | 1Mbps       |
| <b>DETECTOR FUNCTION</b>        | Quasi-Peak, 120kHz      | <b>TESTED BY</b>       | Tony Chen   |

| <b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b> |             |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                                            | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                              | 125.00      | 30.20 QP                | 43.50          | -13.30      | 1.65 H             | 214                  | 17.90            | 12.30                    |
| 2                                                              | 250.01      | 31.20 QP                | 46.00          | -14.80      | 1.52 H             | 111                  | 17.40            | 13.80                    |
| 3                                                              | 375.01      | 40.30 QP                | 46.00          | -5.70       | 1.25 H             | 236                  | 22.50            | 17.80                    |
| 4                                                              | 500.02      | 37.30 QP                | 46.00          | -8.70       | 1.24 H             | 253                  | 16.90            | 20.40                    |
| 5                                                              | 625.02      | 35.20 QP                | 46.00          | -10.80      | 1.07 H             | 58                   | 12.70            | 22.50                    |
| 6                                                              | 750.03      | 33.50 QP                | 46.00          | -12.50      | 1.10 H             | 258                  | 9.20             | 24.30                    |
| 7                                                              | 875.03      | 34.40 QP                | 46.00          | -11.60      | 1.32 H             | 258                  | 9.20             | 25.30                    |

| <b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b> |             |                         |                |             |                    |                      |                  |                          |
|--------------------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                                          | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                            | 125.01      | 31.50 QP                | 43.50          | -12.00      | 1.02 V             | 252                  | 19.20            | 12.30                    |
| 2                                                            | 375.01      | 37.50 QP                | 46.00          | -8.50       | 1.17 V             | 343                  | 19.70            | 17.80                    |
| 3                                                            | 500.02      | 37.20 QP                | 46.00          | -8.80       | 1.17 V             | 97                   | 16.90            | 20.40                    |
| 4                                                            | 625.03      | 35.20 QP                | 46.00          | -10.80      | 1.68 V             | 320                  | 12.70            | 22.50                    |
| 5                                                            | 750.02      | 35.40 QP                | 46.00          | -10.60      | 1.86 V             | 145                  | 11.10            | 24.30                    |
| 6                                                            | 875.03      | 41.20 QP                | 46.00          | -4.80       | 1.58 V             | 360                  | 15.90            | 25.30                    |

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.

#### 4.2.7 TEST RESULTS - DSSS

##### 802.11b DSSS modulation

|                                 |                            |                                          |                                    |
|---------------------------------|----------------------------|------------------------------------------|------------------------------------|
| <b>MODE</b>                     | Channel 1                  | <b>FREQUENCY RANGE</b>                   | 1000~25000MHz                      |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz              | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak (PK)<br>Average (AV)<br>1 MHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 25deg. C, 65%RH,<br>962hPa | <b>TESTED BY</b>                         | Eric Lee                           |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                                 | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                   | 2386.00     | 57.90 PK                | 74.00          | -16.10      | 1.12 H             | 0                    | 28.10            | 29.80                    |
| 1                                                   | 2386.00     | 46.40 AV                | 54.00          | -7.60       | 1.12 H             | 0                    | 16.60            | 29.80                    |
| 2                                                   | *2412.00    | 98.90 PK                |                |             | 1.10 H             | 17                   | 69.00            | 29.90                    |
| 2                                                   | *2412.00    | 94.70 AV                |                |             | 1.10 H             | 17                   | 64.80            | 29.90                    |
| 3                                                   | 3216.00     | 50.50 PK                | 74.00          | -23.50      | 1.93 H             | 317                  | 18.30            | 32.20                    |
| 3                                                   | 3216.00     | 43.60 AV                | 54.00          | -10.40      | 1.93 H             | 317                  | 11.40            | 32.20                    |
| 4                                                   | 4824.00     | 50.20 PK                | 74.00          | -23.80      | 1.45 H             | 96                   | 14.00            | 36.20                    |
| 4                                                   | 4824.00     | 44.90 AV                | 54.00          | -9.10       | 1.45 H             | 96                   | 8.70             | 36.20                    |
| 5                                                   | 7236.00     | 55.10 PK                | 74.00          | -18.90      | 1.52 H             | 315                  | 13.50            | 41.70                    |
| 5                                                   | 7236.00     | 48.90 AV                | 54.00          | -5.10       | 1.52 H             | 315                  | 7.20             | 41.70                    |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                |                         |                |              |                    |                      |                  |                          |
|---------------------------------------------------|----------------|-------------------------|----------------|--------------|--------------------|----------------------|------------------|--------------------------|
| No.                                               | Freq. (MHz)    | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB)  | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                 | 2386.00        | 63.20 PK                | 74.00          | -10.80       | 1.20 V             | 251                  | 33.40            | 29.80                    |
| 1                                                 | <b>2386.00</b> | <b>53.80 AV</b>         | <b>54.00</b>   | <b>-0.20</b> | <b>1.20 V</b>      | <b>251</b>           | <b>24.00</b>     | <b>29.80</b>             |
| 2                                                 | *2412.00       | 114.00 PK               |                |              | 1.20 V             | 251                  | 84.10            | 29.90                    |
| 2                                                 | *2412.00       | 109.10 AV               |                |              | 1.20 V             | 251                  | 79.20            | 29.90                    |
| 3                                                 | 3216.00        | 55.70 PK                | 74.00          | -18.30       | 1.14 V             | 45                   | 23.50            | 32.20                    |
| 3                                                 | 3216.00        | 50.00 AV                | 54.00          | -4.00        | 1.14 V             | 45                   | 17.80            | 32.20                    |
| 4                                                 | 4824.00        | 53.90 PK                | 74.00          | -20.10       | 1.44 V             | 97                   | 17.70            | 36.20                    |
| 4                                                 | 4824.00        | 49.80 AV                | 54.00          | -4.20        | 1.44 V             | 97                   | 13.60            | 36.20                    |
| 5                                                 | 7236.00        | 56.40 PK                | 74.00          | -17.60       | 1.80 V             | 266                  | 14.80            | 41.70                    |
| 5                                                 | 7236.00        | 47.90 AV                | 54.00          | -6.10        | 1.80 V             | 266                  | 6.20             | 41.70                    |

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. The limit value is defined as per 15.247
  6. “ \* ” : Fundamental frequency

|                                 |                            |                                          |                                    |
|---------------------------------|----------------------------|------------------------------------------|------------------------------------|
| <b>MODE</b>                     | Channel 6                  | <b>FREQUENCY RANGE</b>                   | 1000~25000MHz                      |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz              | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak (PK)<br>Average (AV)<br>1 MHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 25deg. C, 65%RH,<br>962hPa | <b>TESTED BY</b>                         | Eric Lee                           |

| <b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b> |             |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                                            | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                              | *2437.00    | 98.70 PK                |                |             | 1.25 H             | 356                  | 68.70            | 30.00                    |
| 1                                                              | *2437.00    | 94.90 AV                |                |             | 1.25 H             | 356                  | 64.90            | 30.00                    |
| 2                                                              | 3249.00     | 49.40 PK                | 74.00          | -24.60      | 1.27 H             | 284                  | 17.10            | 32.30                    |
| 2                                                              | 3249.00     | 42.70 AV                | 54.00          | -11.30      | 1.27 H             | 284                  | 10.40            | 32.30                    |
| 3                                                              | 4874.00     | 49.60 PK                | 74.00          | -24.40      | 1.38 H             | 29                   | 13.10            | 36.50                    |
| 3                                                              | 4874.00     | 42.90 AV                | 54.00          | -11.10      | 1.38 H             | 29                   | 6.40             | 36.50                    |
| 4                                                              | 7311.00     | 53.80 PK                | 74.00          | -20.20      | 1.21 H             | 295                  | 12.00            | 41.80                    |
| 4                                                              | 7311.00     | 47.10 AV                | 54.00          | -6.90       | 1.21 H             | 295                  | 5.30             | 41.80                    |

| <b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b> |             |                         |                |             |                    |                      |                  |                          |
|--------------------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                                          | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                            | *2437.00    | 114.30 PK               |                |             | 1.18 V             | 316                  | 84.30            | 30.00                    |
| 1                                                            | *2437.00    | 109.20 AV               |                |             | 1.18 V             | 316                  | 79.20            | 30.00                    |
| 2                                                            | 3249.00     | 53.90 PK                | 74.00          | -20.10      | 1.21 V             | 49                   | 21.60            | 32.30                    |
| 2                                                            | 3249.00     | 48.40 AV                | 54.00          | -5.60       | 1.21 V             | 49                   | 16.10            | 32.30                    |
| 3                                                            | 4874.00     | 52.40 PK                | 74.00          | -21.60      | 1.32 V             | 89                   | 15.90            | 36.50                    |
| 3                                                            | 4874.00     | 47.70 AV                | 54.00          | -6.30       | 1.32 V             | 89                   | 11.20            | 36.50                    |
| 4                                                            | 7311.00     | 55.70 PK                | 74.00          | -18.30      | 1.43 V             | 286                  | 13.90            | 41.80                    |
| 4                                                            | 7311.00     | 48.10 AV                | 54.00          | -5.90       | 1.43 V             | 286                  | 6.30             | 41.80                    |

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. The limit value is defined as per 15.247
  6. “ \* ” : Fundamental frequency

|                                 |                            |                                          |                                    |
|---------------------------------|----------------------------|------------------------------------------|------------------------------------|
| <b>MODE</b>                     | Channel 11                 | <b>FREQUENCY RANGE</b>                   | 1000~25000MHz                      |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz              | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak (PK)<br>Average (AV)<br>1 MHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 25deg. C, 65%RH,<br>962hPa | <b>TESTED BY</b>                         | Eric Lee                           |

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

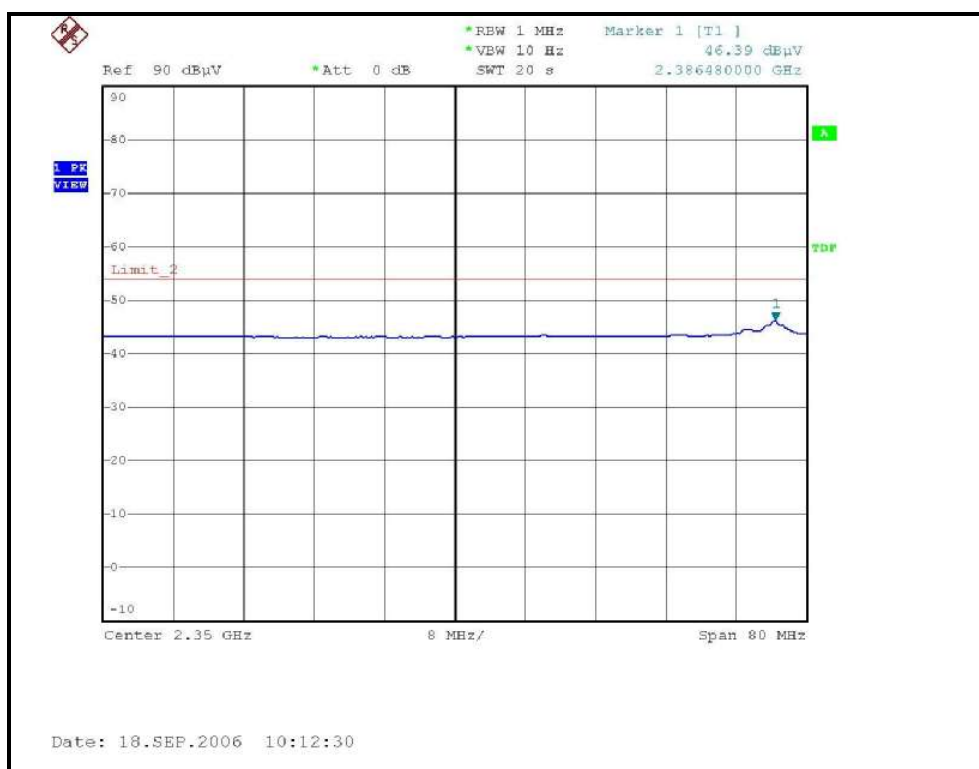
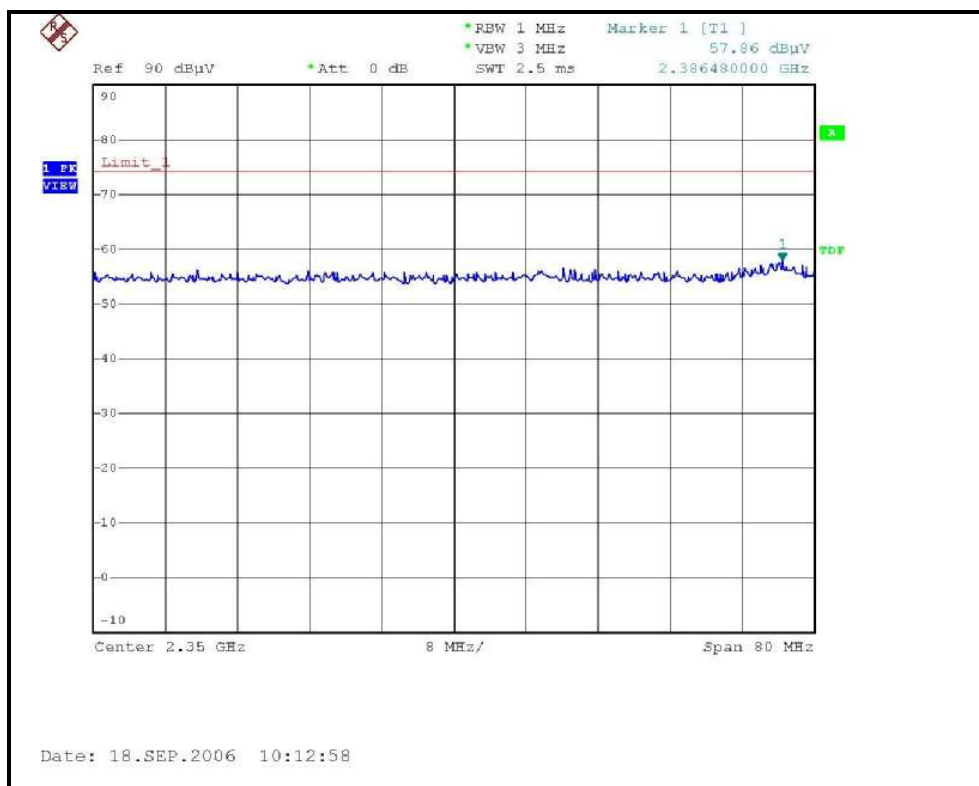
| No. | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|-----|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1   | *2462.00    | 98.30 PK                |                |             | 1.33 H             | 334                  | 68.30            | 30.10                    |
| 1   | *2462.00    | 94.80 AV                |                |             | 1.33 H             | 334                  | 64.70            | 30.10                    |
| 2   | 2488.00     | 57.60 PK                | 74.00          | -16.40      | 1.33 H             | 310                  | 27.50            | 30.10                    |
| 2   | 2488.00     | 44.10 AV                | 54.00          | -9.90       | 1.33 H             | 310                  | 14.00            | 30.10                    |
| 3   | 3282.00     | 48.90 PK                | 74.00          | -25.10      | 1.90 H             | 119                  | 16.50            | 32.40                    |
| 3   | 3282.00     | 41.50 AV                | 54.00          | -12.50      | 1.90 H             | 119                  | 9.10             | 32.40                    |
| 4   | 4924.00     | 48.20 PK                | 74.00          | -25.80      | 1.00 H             | 5                    | 11.50            | 36.70                    |
| 4   | 4924.00     | 40.50 AV                | 54.00          | -13.50      | 1.00 H             | 5                    | 3.80             | 36.70                    |
| 5   | 7386.00     | 52.40 PK                | 74.00          | -21.60      | 1.34 H             | 311                  | 10.50            | 41.80                    |
| 5   | 7386.00     | 46.00 AV                | 54.00          | -8.00       | 1.34 H             | 311                  | 4.10             | 41.80                    |

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

| No. | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|-----|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1   | *2462.00    | 113.50 PK               |                |             | 1.15 V             | 18                   | 83.40            | 30.10                    |
| 1   | *2462.00    | 109.50 AV               |                |             | 1.15 V             | 18                   | 79.40            | 30.10                    |
| 2   | 2488.00     | 63.20 PK                | 74.00          | -10.80      | 1.15 V             | 18                   | 33.10            | 30.10                    |
| 2   | 2488.00     | 52.60 AV                | 54.00          | -1.40       | 1.15 V             | 18                   | 22.50            | 30.10                    |
| 3   | 3282.00     | 51.50 PK                | 74.00          | -22.50      | 1.27 V             | 34                   | 19.10            | 32.40                    |
| 3   | 3282.00     | 46.20 AV                | 54.00          | -7.80       | 1.27 V             | 34                   | 13.90            | 32.40                    |
| 4   | 4924.00     | 51.40 PK                | 74.00          | -22.60      | 1.23 V             | 45                   | 14.70            | 36.70                    |
| 4   | 4924.00     | 46.30 AV                | 54.00          | -7.70       | 1.23 V             | 45                   | 9.70             | 36.70                    |
| 5   | 7386.00     | 54.50 PK                | 74.00          | -19.50      | 1.45 V             | 332                  | 12.60            | 41.80                    |
| 5   | 7386.00     | 47.70 AV                | 54.00          | -6.30       | 1.45 V             | 332                  | 5.80             | 41.80                    |

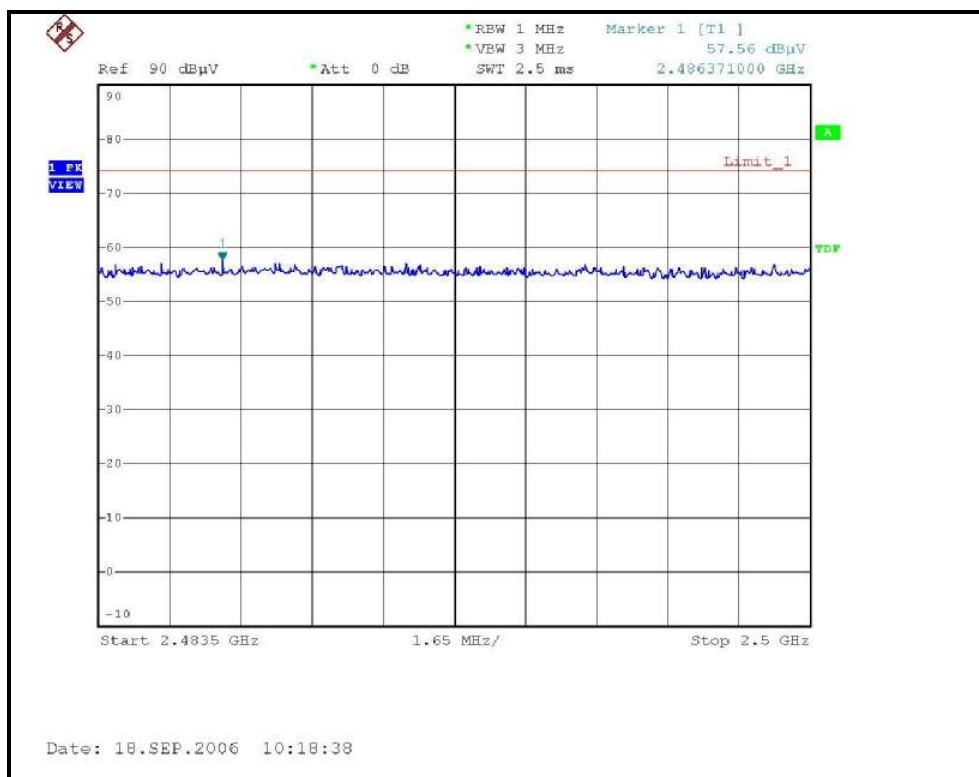
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. The limit value is defined as per 15.247
  6. " \* " : Fundamental frequency

# RESTRICTED BANDEDGE (802.11b MODE, CH1, HORIZONTAL )

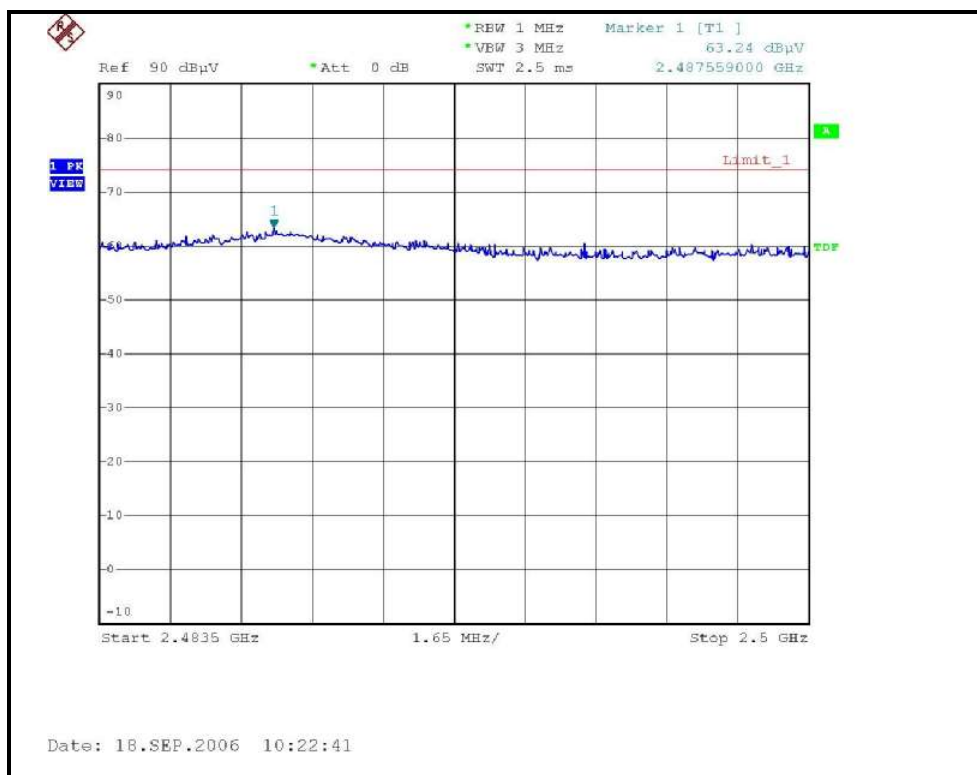




# RESTRICTED BANDEDGE (802.11b MODE, CH11, HORIZONTAL )



# RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL )



#### 4.2.8 TEST RESULTS - OFDM 802.11g Normal OFDM modulation

|                                 |                            |                                          |                                    |
|---------------------------------|----------------------------|------------------------------------------|------------------------------------|
| <b>MODE</b>                     | Channel 1                  | <b>FREQUENCY RANGE</b>                   | 1000~25000MHz                      |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz              | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak (PK)<br>Average (AV)<br>1 MHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 25deg. C, 65%RH,<br>962hPa | <b>TESTED BY</b>                         | Eric Lee                           |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                                 | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                   | 2390.00     | 63.80 PK                | 74.00          | -10.20      | 1.15 H             | 356                  | 33.90            | 29.80                    |
| 1                                                   | 2390.00     | 47.00 AV                | 54.00          | -7.00       | 1.15 H             | 356                  | 17.20            | 29.80                    |
| 2                                                   | *2412.00    | 99.30 PK                |                |             | 1.14 H             | 21                   | 69.40            | 29.90                    |
| 2                                                   | *2412.00    | 85.80 AV                |                |             | 1.14 H             | 21                   | 55.90            | 29.90                    |
| 3                                                   | 3216.00     | 54.30 PK                | 74.00          | -19.70      | 1.74 H             | 56                   | 22.10            | 32.20                    |
| 3                                                   | 3216.00     | 50.00 AV                | 54.00          | -4.00       | 1.74 H             | 56                   | 17.80            | 32.20                    |
| 4                                                   | 4824.00     | 47.90 PK                | 74.00          | -26.10      | 1.70 H             | 88                   | 11.70            | 36.20                    |
| 4                                                   | 4824.00     | 35.20 AV                | 54.00          | -18.80      | 1.70 H             | 88                   | -1.00            | 36.20                    |
| 5                                                   | 7236.00     | 61.90 PK                | 74.00          | -12.10      | 1.84 H             | 316                  | 20.30            | 41.70                    |
| 5                                                   | 7236.00     | 44.80 AV                | 54.00          | -9.20       | 1.84 H             | 316                  | 3.10             | 41.70                    |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|---------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                               | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                 | 2390.00     | 70.30 PK                | 74.00          | -3.70       | 1.18 V             | 350                  | 40.50            | 29.80                    |
| 1                                                 | 2390.00     | 53.00 AV                | 54.00          | -1.00       | 1.18 V             | 350                  | 23.10            | 29.80                    |
| 2                                                 | *2412.00    | 115.10 PK               |                |             | 1.18 V             | 350                  | 85.20            | 29.90                    |
| 2                                                 | *2412.00    | 101.00 AV               |                |             | 1.18 V             | 350                  | 71.10            | 29.90                    |
| 3                                                 | 3216.00     | 56.70 PK                | 74.00          | -17.30      | 1.32 V             | 32                   | 24.50            | 32.20                    |
| 3                                                 | 3216.00     | 52.90 AV                | 54.00          | -1.10       | 1.32 V             | 32                   | 20.70            | 32.20                    |
| 4                                                 | 4824.00     | 47.60 PK                | 74.00          | -26.40      | 1.00 V             | 36                   | 11.40            | 36.20                    |
| 4                                                 | 4824.00     | 34.40 AV                | 54.00          | -19.60      | 1.00 V             | 36                   | -1.90            | 36.20                    |
| 5                                                 | 7236.00     | 63.00 PK                | 74.00          | -11.00      | 1.17 V             | 265                  | 21.30            | 41.70                    |
| 5                                                 | 7236.00     | 44.50 AV                | 54.00          | -9.50       | 1.17 V             | 265                  | 2.80             | 41.70                    |

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. The limit value is defined as per 15.247
  6. “ \* ” : Fundamental frequency

|                                 |                            |                                          |                                    |
|---------------------------------|----------------------------|------------------------------------------|------------------------------------|
| <b>MODE</b>                     | Channel 6                  | <b>FREQUENCY RANGE</b>                   | 1000~25000MHz                      |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz              | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak (PK)<br>Average (AV)<br>1 MHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 25deg. C, 65%RH,<br>962hPa | <b>TESTED BY</b>                         | Eric Lee                           |

| <b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b> |             |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                                            | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                              | *2437.00    | 99.70 PK                |                |             | 1.21 H             | 343                  | 69.70            | 30.00                    |
| 1                                                              | *2437.00    | 85.90 AV                |                |             | 1.21 H             | 343                  | 55.90            | 30.00                    |
| 2                                                              | 3249.00     | 54.90 PK                | 74.00          | -19.10      | 1.24 H             | 276                  | 22.60            | 32.30                    |
| 2                                                              | 3249.00     | 48.80 AV                | 54.00          | -5.20       | 1.24 H             | 276                  | 16.50            | 32.30                    |
| 3                                                              | 4874.00     | 48.50 PK                | 74.00          | -25.50      | 1.43 H             | 251                  | 12.00            | 36.50                    |
| 3                                                              | 4874.00     | 35.90 AV                | 54.00          | -18.10      | 1.43 H             | 251                  | -0.60            | 36.50                    |
| 4                                                              | 7311.00     | 62.10 PK                | 74.00          | -11.90      | 1.62 H             | 321                  | 20.30            | 41.80                    |
| 4                                                              | 7311.00     | 44.30 AV                | 54.00          | -9.70       | 1.62 H             | 321                  | 2.50             | 41.80                    |

| <b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b> |             |                         |                |             |                    |                      |                  |                          |
|--------------------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.                                                          | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                            | *2437.00    | 115.20 PK               |                |             | 1.23 V             | 342                  | 85.20            | 30.00                    |
| 1                                                            | *2437.00    | 101.30 AV               |                |             | 1.23 V             | 342                  | 71.30            | 30.00                    |
| 2                                                            | 3249.00     | 55.30 PK                | 74.00          | -18.70      | 1.32 V             | 288                  | 23.00            | 32.30                    |
| 2                                                            | 3249.00     | 51.70 AV                | 54.00          | -2.30       | 1.32 V             | 288                  | 19.40            | 32.30                    |
| 3                                                            | 4874.00     | 49.40 PK                | 74.00          | -24.60      | 1.05 V             | 47                   | 12.90            | 36.50                    |
| 3                                                            | 4874.00     | 36.10 AV                | 54.00          | -17.90      | 1.05 V             | 47                   | -0.40            | 36.50                    |
| 4                                                            | 7311.00     | 63.20 PK                | 74.00          | -10.80      | 1.36 V             | 215                  | 21.40            | 41.80                    |
| 4                                                            | 7311.00     | 44.70 AV                | 54.00          | -9.30       | 1.36 V             | 215                  | 2.90             | 41.80                    |

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. The limit value is defined as per 15.247
  6. “ \* ” : Fundamental frequency

|                                 |                            |                                          |                                    |
|---------------------------------|----------------------------|------------------------------------------|------------------------------------|
| <b>MODE</b>                     | Channel 11                 | <b>FREQUENCY RANGE</b>                   | 1000~25000MHz                      |
| <b>INPUT POWER (SYSTEM)</b>     | 120Vac, 60 Hz              | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak (PK)<br>Average (AV)<br>1 MHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 25deg. C, 65%RH,<br>962hPa | <b>TESTED BY</b>                         | Eric Lee                           |

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| No. | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|-----|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1   | *2462.00    | 100.20 PK               |                |             | 1.43 H             | 293                  | 70.10            | 30.10                    |
| 1   | *2462.00    | 85.80 AV                |                |             | 1.43 H             | 293                  | 55.80            | 30.10                    |
| 2   | 2483.50     | 61.30 PK                | 74.00          | -12.70      | 1.43 H             | 293                  | 31.20            | 30.10                    |
| 2   | 2483.50     | 45.30 AV                | 54.00          | -8.70       | 1.43 H             | 293                  | 15.20            | 30.10                    |
| 3   | 3179.00     | 55.80 PK                | 74.00          | -18.20      | 1.69 H             | 246                  | 23.70            | 32.10                    |
| 3   | 3179.00     | 33.50 AV                | 54.00          | -20.50      | 1.69 H             | 246                  | 1.40             | 32.10                    |
| 4   | 3282.70     | 59.80 PK                | 74.00          | -14.20      | 1.09 H             | 47                   | 27.40            | 32.40                    |
| 4   | 3282.70     | 45.70 AV                | 54.00          | -8.30       | 1.09 H             | 47                   | 13.30            | 32.40                    |
| 5   | 4924.00     | 58.10 PK                | 74.00          | -15.90      | 2.00 H             | 118                  | 21.40            | 36.70                    |
| 5   | 4924.00     | 37.30 AV                | 54.00          | -16.70      | 2.00 H             | 118                  | 0.60             | 36.70                    |
| 6   | 7386.00     | 62.60 PK                | 74.00          | -11.40      | 1.54 H             | 314                  | 20.70            | 41.80                    |
| 6   | 7386.00     | 44.70 AV                | 54.00          | -9.30       | 1.54 H             | 314                  | 2.90             | 41.80                    |

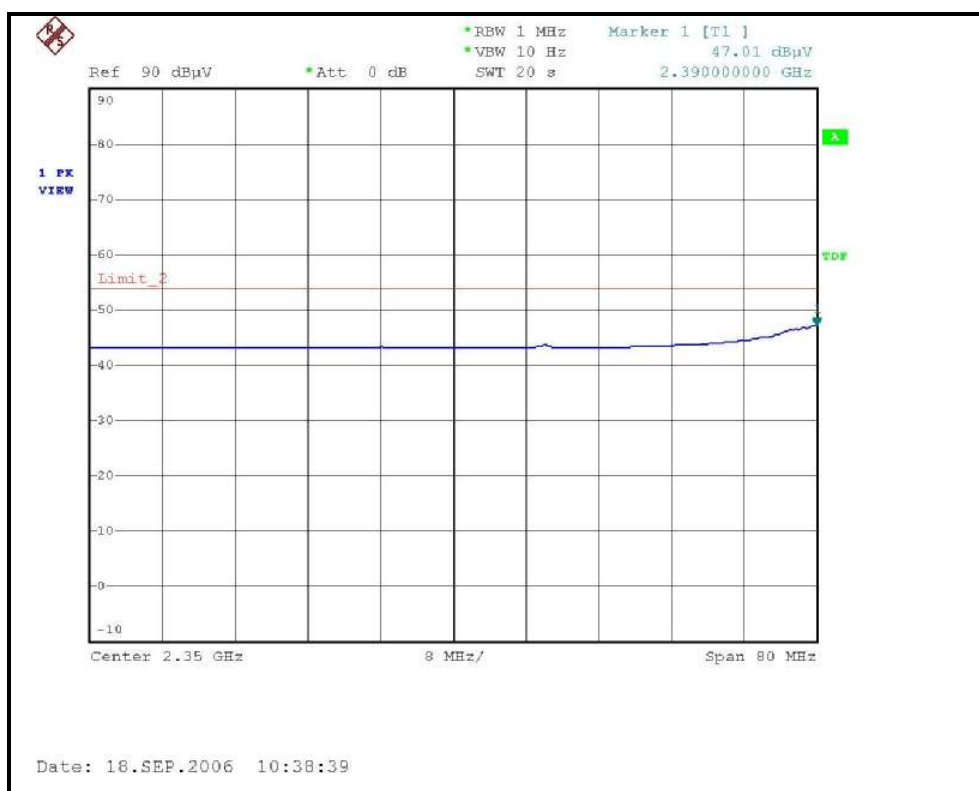
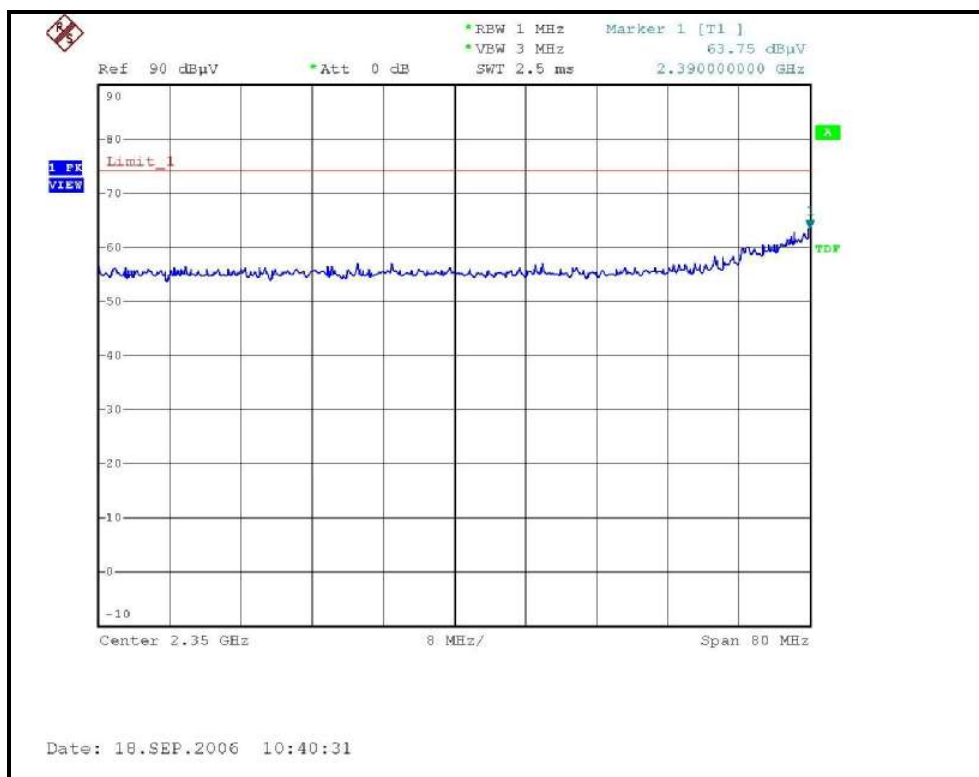
#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

| No. | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|-----|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1   | *2462.00    | 115.10 PK               |                |             | 1.15 V             | 18                   | 85.00            | 30.10                    |
| 1   | *2462.00    | 100.50 AV               |                |             | 1.15 V             | 18                   | 70.40            | 30.10                    |
| 2   | 2483.50     | 72.40 PK                | 74.00          | -1.60       | 1.15 V             | 18                   | 42.30            | 30.10                    |
| 2   | 2483.50     | 53.40 AV                | 54.00          | -0.60       | 1.15 V             | 18                   | 23.30            | 30.10                    |
| 3   | 3179.00     | 64.80 PK                | 74.00          | -9.20       | 1.32 V             | 16                   | 32.70            | 32.10                    |
| 3   | 3179.00     | 33.60 AV                | 54.00          | -20.40      | 1.32 V             | 16                   | 1.50             | 32.10                    |
| 4   | 3282.70     | 54.20 PK                | 74.00          | -19.80      | 1.08 V             | 42                   | 21.80            | 32.40                    |
| 4   | 3282.70     | 50.80 AV                | 54.00          | -3.20       | 1.08 V             | 42                   | 18.40            | 32.40                    |
| 5   | 4924.00     | 53.00 PK                | 74.00          | -21.00      | 1.72 V             | 184                  | 16.30            | 36.70                    |
| 5   | 4924.00     | 37.00 AV                | 54.00          | -17.00      | 1.72 V             | 184                  | 0.30             | 36.70                    |
| 6   | 7386.00     | 65.50 PK                | 74.00          | -8.50       | 1.64 V             | 198                  | 23.70            | 41.80                    |
| 6   | 7386.00     | 46.20 AV                | 54.00          | -7.80       | 1.64 V             | 198                  | 4.40             | 41.80                    |

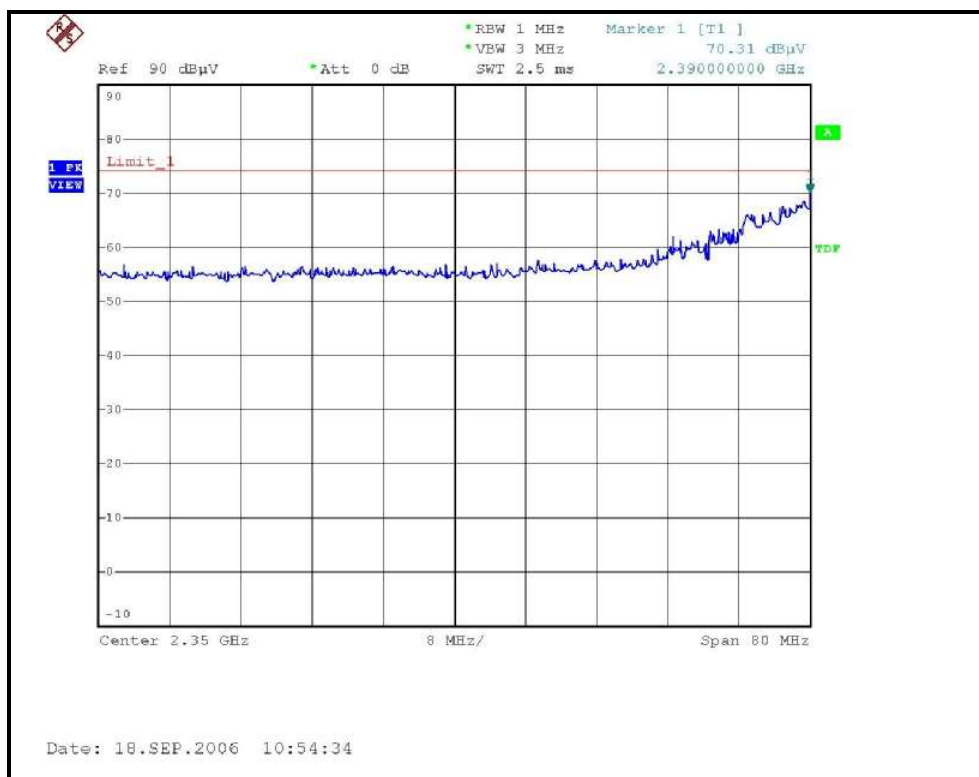
#### REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. “ \* ” : Fundamental frequency

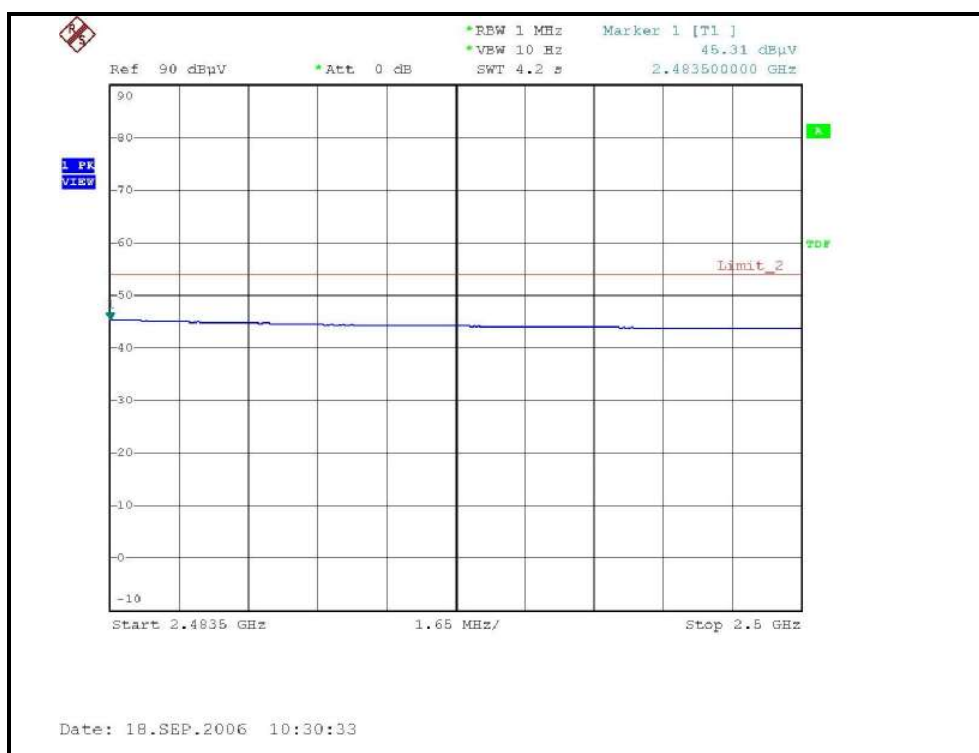
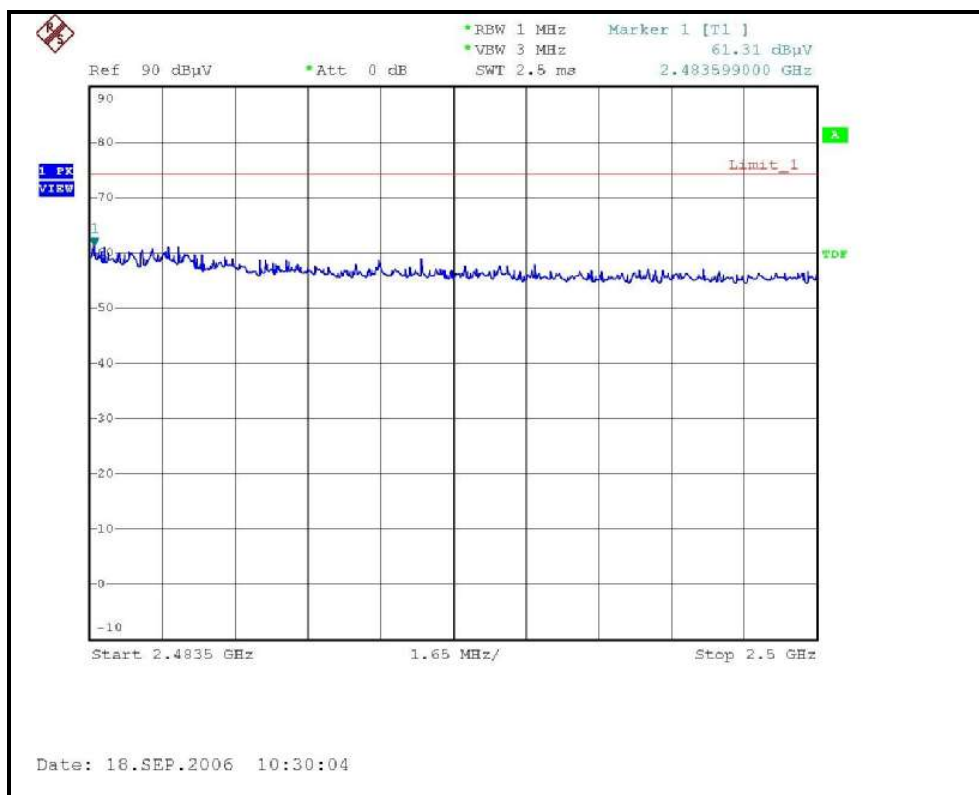
# RESTRICTED BANDEDGE (802.11g MODE, CH1, HORIZONTAL )



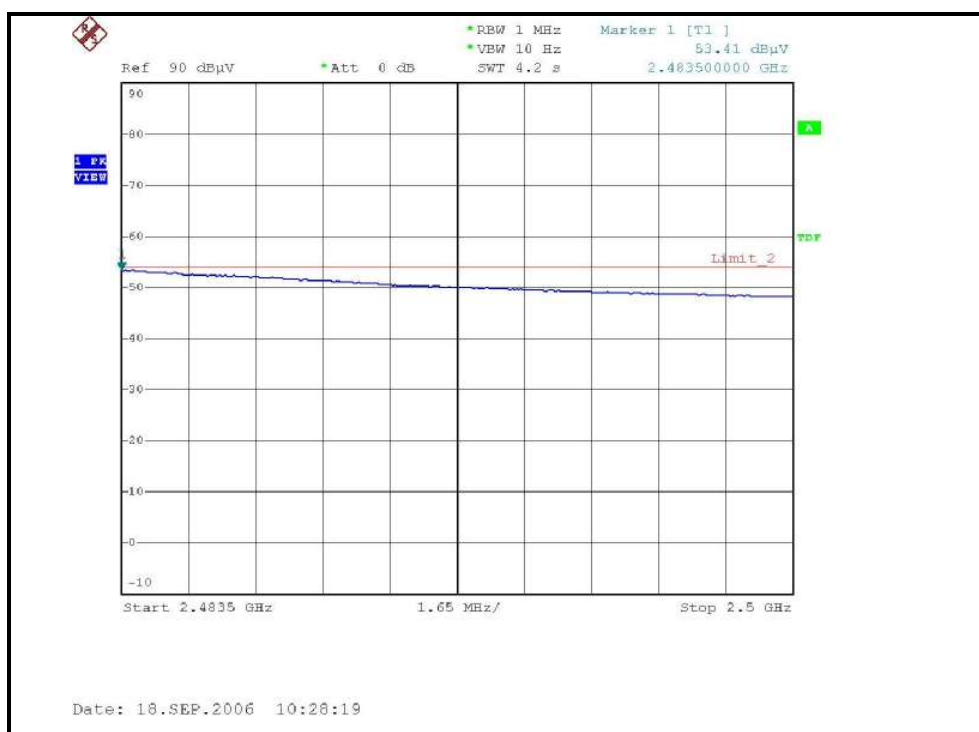
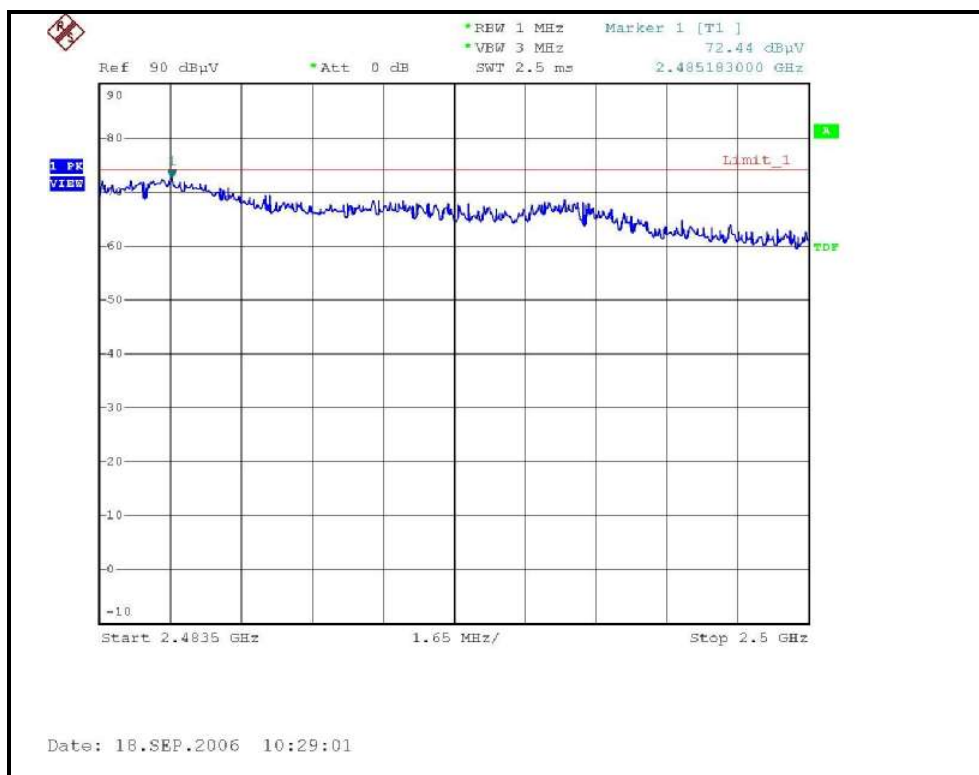
# RESTRICTED BANDEDGE (802.11g MODE, CH1, VERTICAL )



# RESTRICTED BANDEDGE (802.11g MODE, CH11, HORIZONTAL )



# RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL )



### 4.3 6dB BANDWIDTH MEASUREMENT

#### 4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

#### 4.3.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100036     | Nov. 23, 2006    |

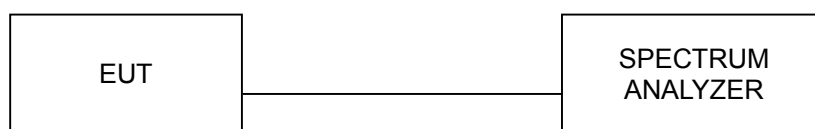
**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 kHz RBW and 100 kHz VBW. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

#### 4.3.4 TEST SETUP



For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

#### 4.3.5 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

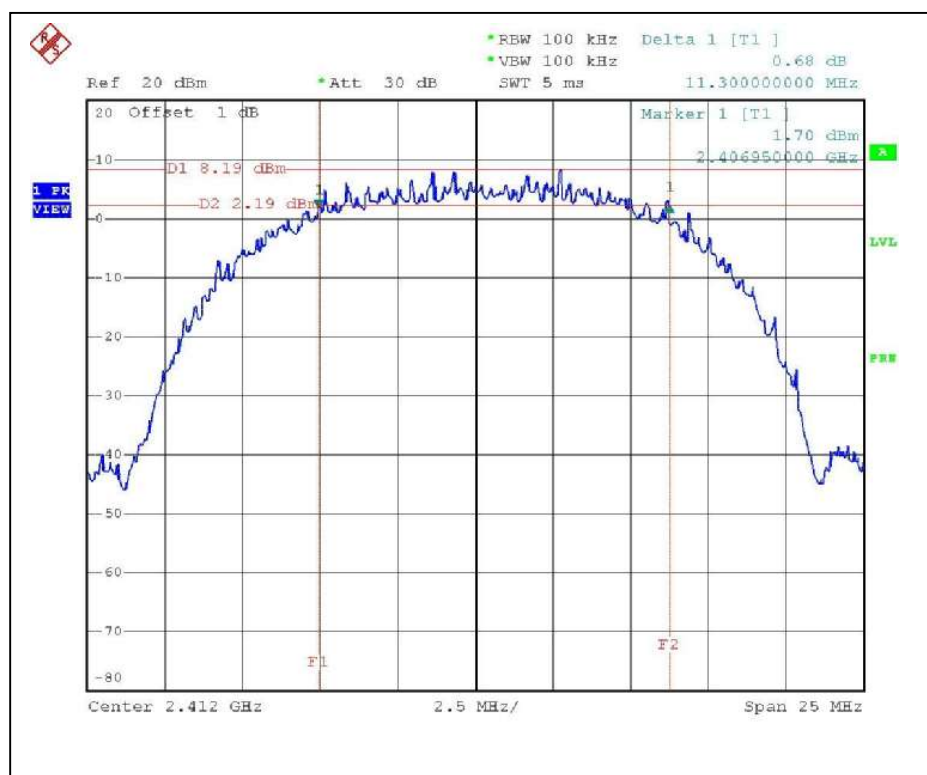
#### 4.3.6 TEST RESULTS –DSSS

##### 802.11b DSSS modulation

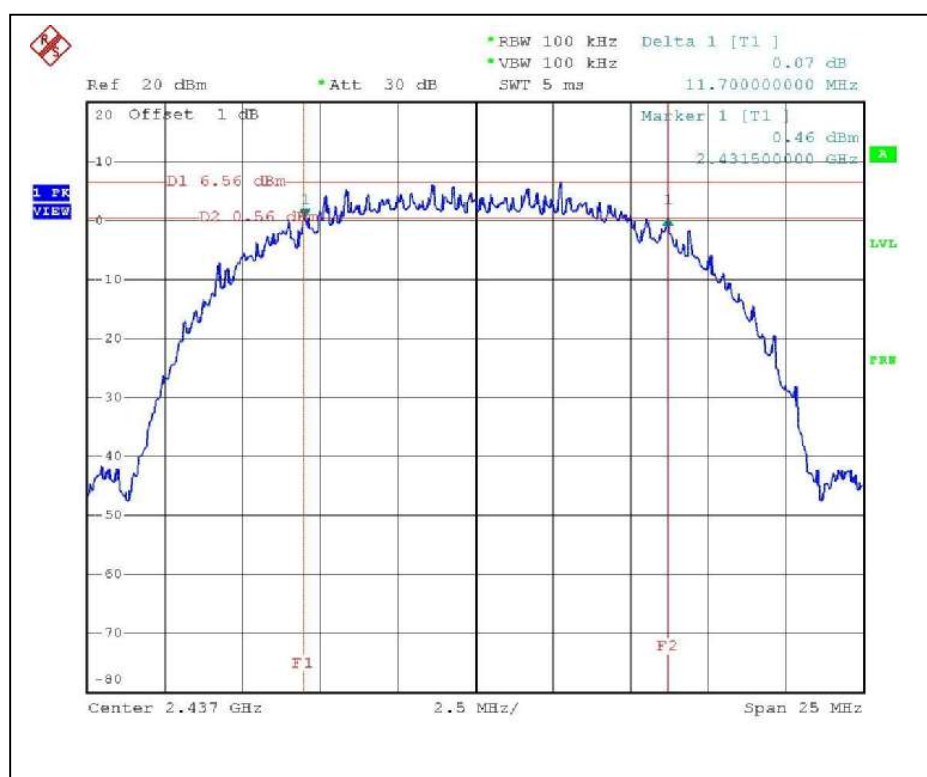
|                             |               |                                 |                         |
|-----------------------------|---------------|---------------------------------|-------------------------|
| <b>MODULATION TYPE</b>      | CCK           | <b>TRANSFER RATE</b>            | 1Mbps                   |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 27deg. C, 59%RH, 962hPa |
| <b>TESTED BY</b>            | Tony Chen     |                                 |                         |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6 dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS/FAIL |
|---------|-------------------------|----------------------|---------------------|-----------|
| 1       | 2412                    | 11.30                | 0.5                 | PASS      |
| 6       | 2437                    | 11.70                | 0.5                 | PASS      |
| 11      | 2462                    | 12.25                | 0.5                 | PASS      |

# CH1



# CH6





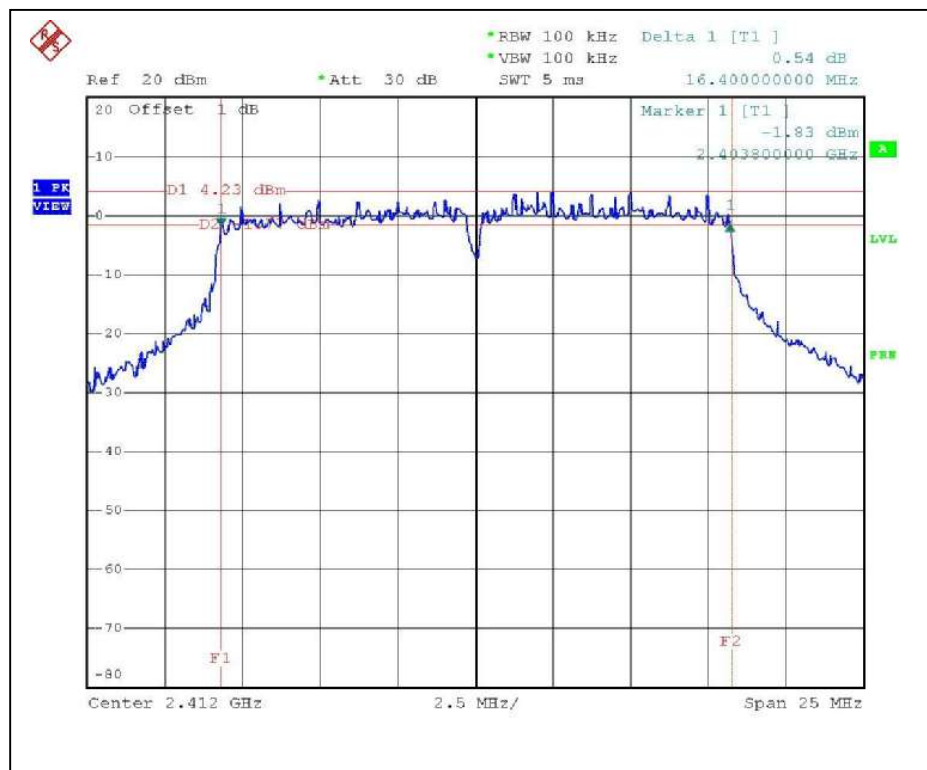
#### 4.3.7 TEST RESULTS-OFDM

##### 802.11g OFDM modulation

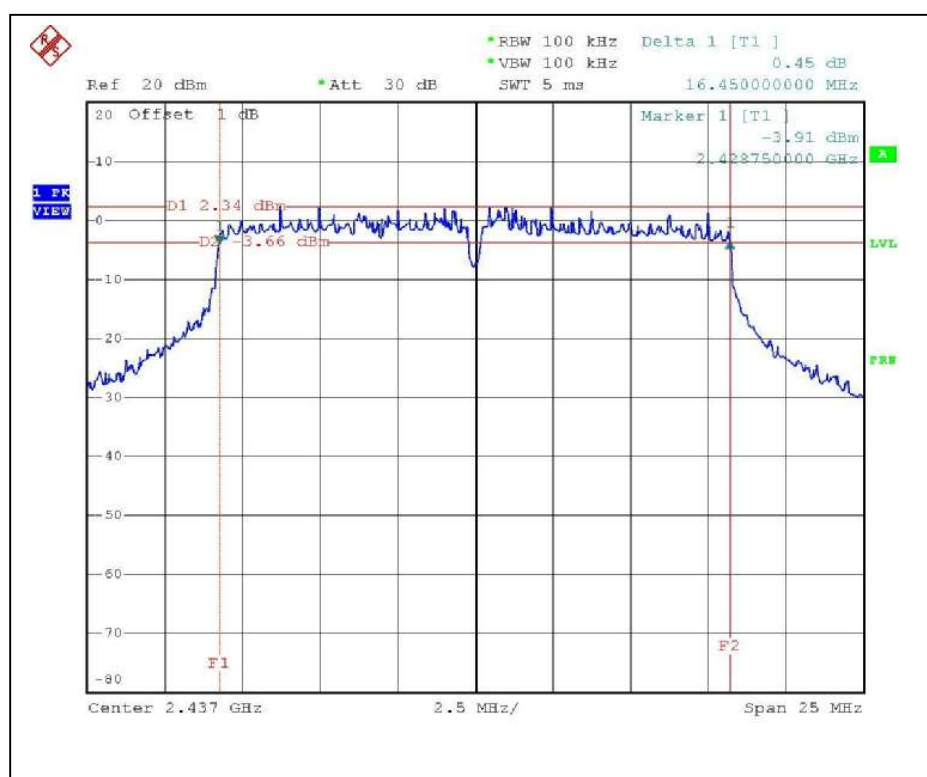
|                             |               |                                 |                         |
|-----------------------------|---------------|---------------------------------|-------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6Mbps                   |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 27deg. C, 59%RH, 962hPa |
| <b>TESTED BY</b>            | Tony Chen     |                                 |                         |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6 dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS/FAIL |
|---------|-------------------------|----------------------|---------------------|-----------|
| 1       | 2412                    | 16.40                | 0.5                 | PASS      |
| 6       | 2437                    | 16.45                | 0.5                 | PASS      |
| 11      | 2462                    | 16.40                | 0.5                 | PASS      |

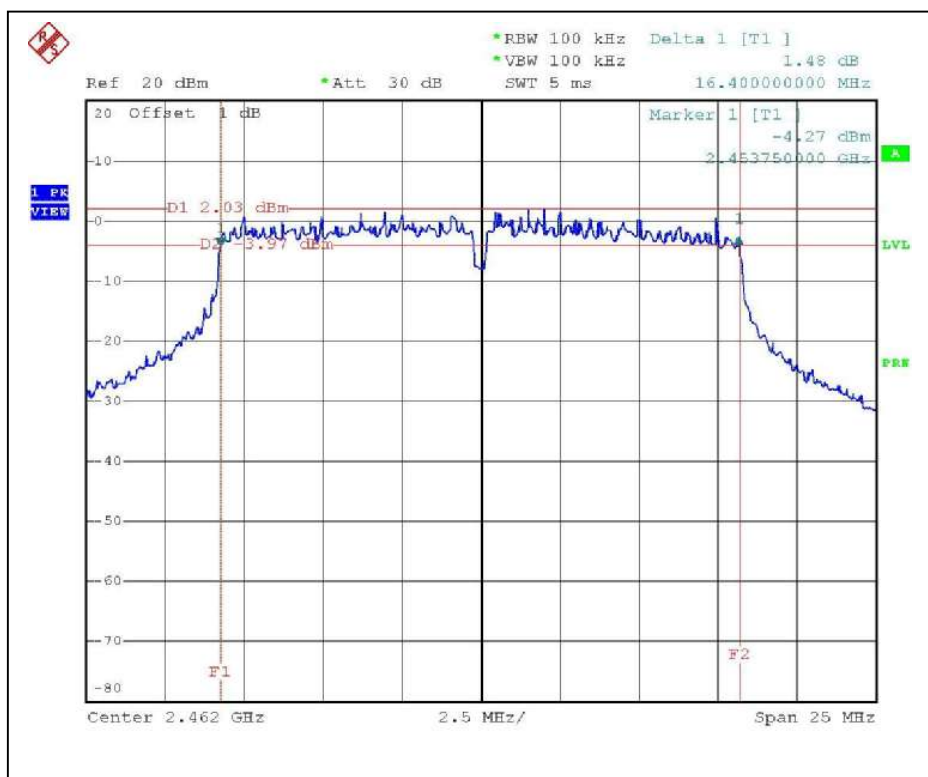
# CH1



# CH6



CH11



#### 4.4 MAXIMUM PEAK OUTPUT POWER

##### 4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

##### 4.4.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100036     | Nov. 23, 2006    |
| Agilent SIGNAL GENERATOR   | E8257C    | MY43320668 | Dec. 07, 2006    |
| TEKTRONIX OSCILLOSCOPE     | TDS380    | B016335    | Jun. 21, 2007    |
| NARDA DETECTOR             | 4503A     | FSCM99899  | NA               |

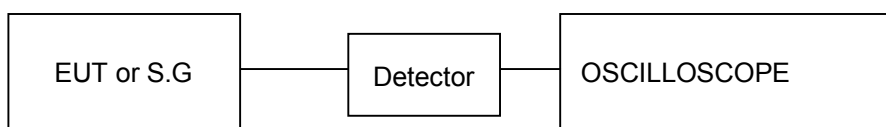
**NOTE:**

The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the peak response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same peak reading on oscilloscope. Record the power level.

#### 4.4.4 TEST SETUP



#### 4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5

#### 4.4.6 TEST RESULTS – DSSS

##### 802.11b DSSS modulation

|                             |              |                                 |                         |
|-----------------------------|--------------|---------------------------------|-------------------------|
| <b>MODULATION TYPE</b>      | CCK          | <b>TRANSFER RATE</b>            | 1Mbps                   |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 27deg. C, 59%RH, 962hPa |
| <b>TESTED BY</b>            | Tony Chen    |                                 |                         |

Antenna Gain : 9.0 dBi + Cable loss 0.7dB

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) | PEAK POWER OUTPUT (dBm) | PEAK POWER LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|------------------------|-------------------------|------------------------|-----------|
| 1       | 2412                    | 65.313                 | 18.15                   | 27.7                   | PASS      |
| 6       | 2437                    | 63.096                 | 18.00                   | 27.7                   | PASS      |
| 11      | 2462                    | 64.714                 | 18.11                   | 27.7                   | PASS      |

#### 4.4.7 TEST RESULTS –OFDM

##### 802.11g OFDM modulation

|                             |              |                                 |                         |
|-----------------------------|--------------|---------------------------------|-------------------------|
| <b>MODULATION TYPE</b>      | BPSK         | <b>TRANSFER RATE</b>            | 6Mbps                   |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 27deg. C, 59%RH, 962hPa |
| <b>TESTED BY</b>            | Tony Chen    |                                 |                         |

Antenna Gain : 9.0 dBi + Cable loss 0.7dB

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) | PEAK POWER OUTPUT (dBm) | PEAK POWER LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|------------------------|-------------------------|------------------------|-----------|
| 1       | 2412                    | 127.350                | 21.05                   | 27.7                   | PASS      |
| 6       | 2437                    | 128.825                | 21.10                   | 27.7                   | PASS      |
| 11      | 2462                    | 133.045                | 21.24                   | 27.7                   | PASS      |

## 4.5 POWER SPECTRAL DENSITY MEASUREMENT

### 4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

### 4.5.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100036     | Nov. 23, 2006    |

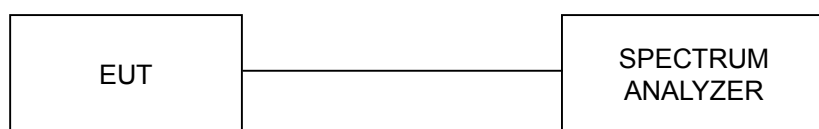
**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time=span/3kHz. The power spectral density was measured and recorded. The sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

#### 4.5.4 TEST SETUP



#### 4.5.5 EUT OPERATING CONDITIONS

Same as 4.3.5

#### 4.5.6 TEST RESULTS –DSSS

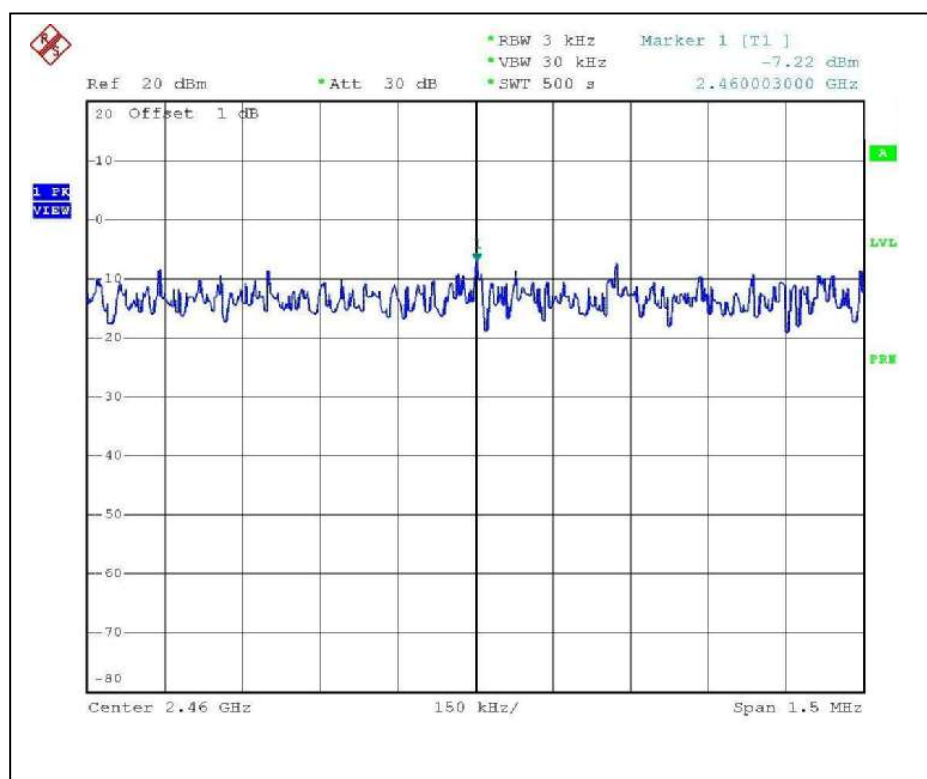
##### 802.11b DSSS modulation

|                             |              |                                 |                         |
|-----------------------------|--------------|---------------------------------|-------------------------|
| <b>MODULATION TYPE</b>      | CCK          | <b>TRANSFER RATE</b>            | 1Mbps                   |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 27deg. C, 59%RH, 962hPa |
| <b>TESTED BY</b>            | Tony Chen    |                                 |                         |

| CHANNEL NUMBER | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3 KHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|----------------|--------------------------|----------------------------------|---------------------|-----------|
| 1              | 2412                     | -6.33                            | 8                   | PASS      |
| 6              | 2437                     | -8.52                            | 8                   | PASS      |
| 11             | 2462                     | -7.22                            | 8                   | PASS      |



CH11



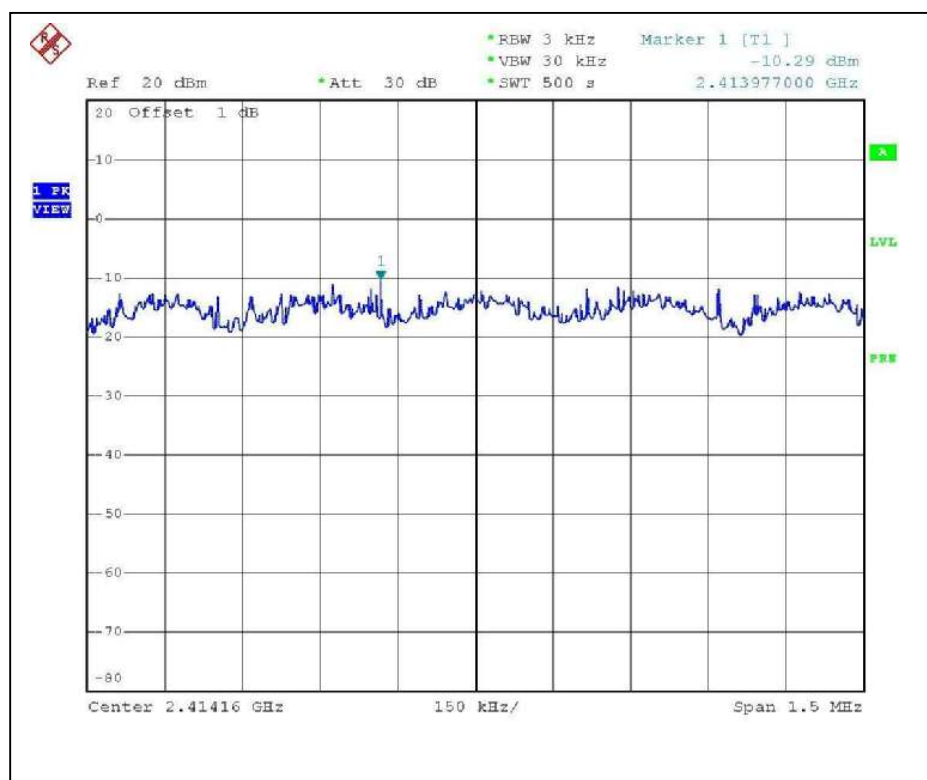
#### 4.5.7 TEST RESULTS –OFDM

##### 802.11g OFDM modulation

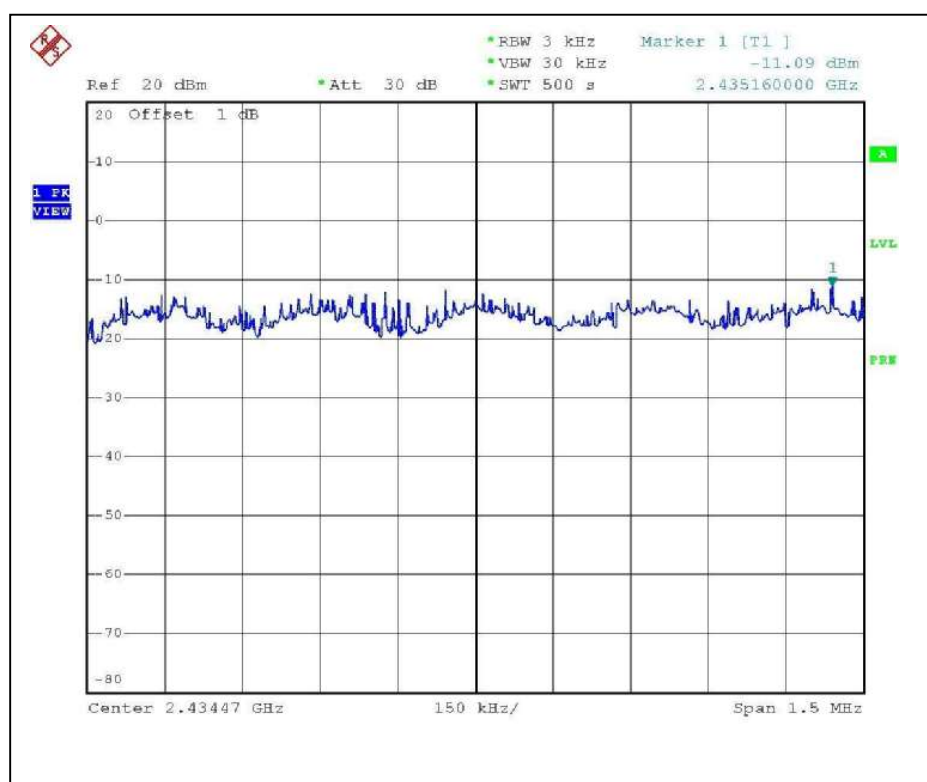
|                             |              |                                 |                         |
|-----------------------------|--------------|---------------------------------|-------------------------|
| <b>MODULATION TYPE</b>      | BPSK         | <b>TRANSFER RATE</b>            | 6Mbps                   |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 27deg. C, 59%RH, 962hPa |
| <b>TESTED BY</b>            | Tony Chen    |                                 |                         |

| CHANNEL NUMBER | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3 KHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|----------------|--------------------------|----------------------------------|---------------------|-----------|
| 1              | 2412                     | -10.29                           | 8                   | PASS      |
| 6              | 2437                     | -11.09                           | 8                   | PASS      |
| 11             | 2462                     | -12.57                           | 8                   | PASS      |

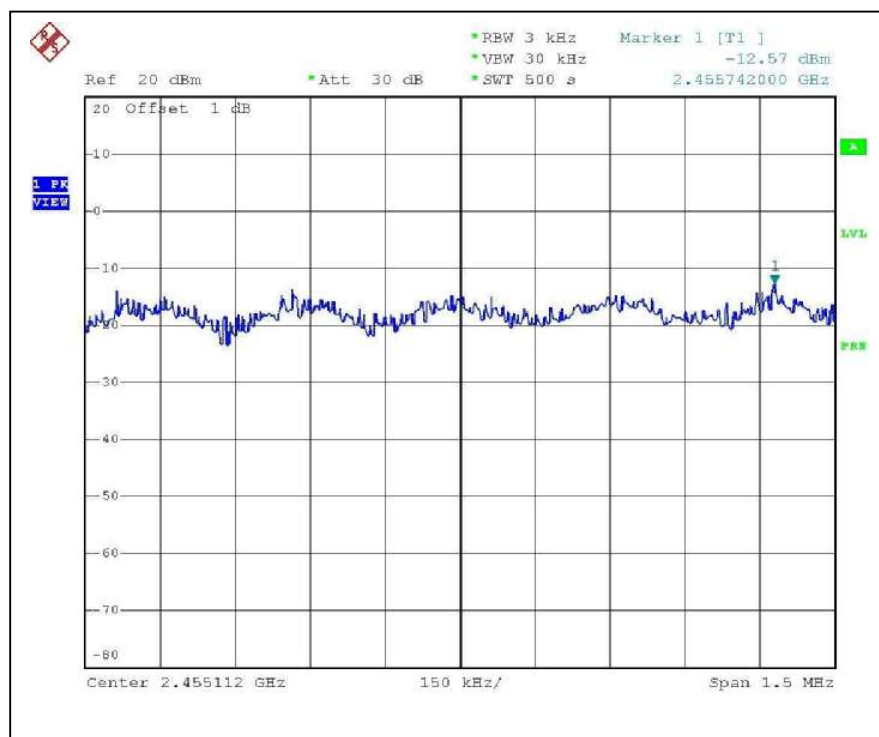
# CH1



# CH6



CH11



## 4.6 CONDUCTED EMISSION AND BAND EDGES MEASUREMENT

### 4.6.1 LIMITS OF CONDUCTED EMISSION AND BAND EDGES MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100KHz Resolution Bandwidth).

### 4.6.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100036     | Nov. 23, 2006    |

**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

### 4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges were measured and recorded.

The spectrum plots (RBW = VBW = 100kHz) are attached on the following pages.

### 4.6.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.6.5 EUT OPERATING CONDITION

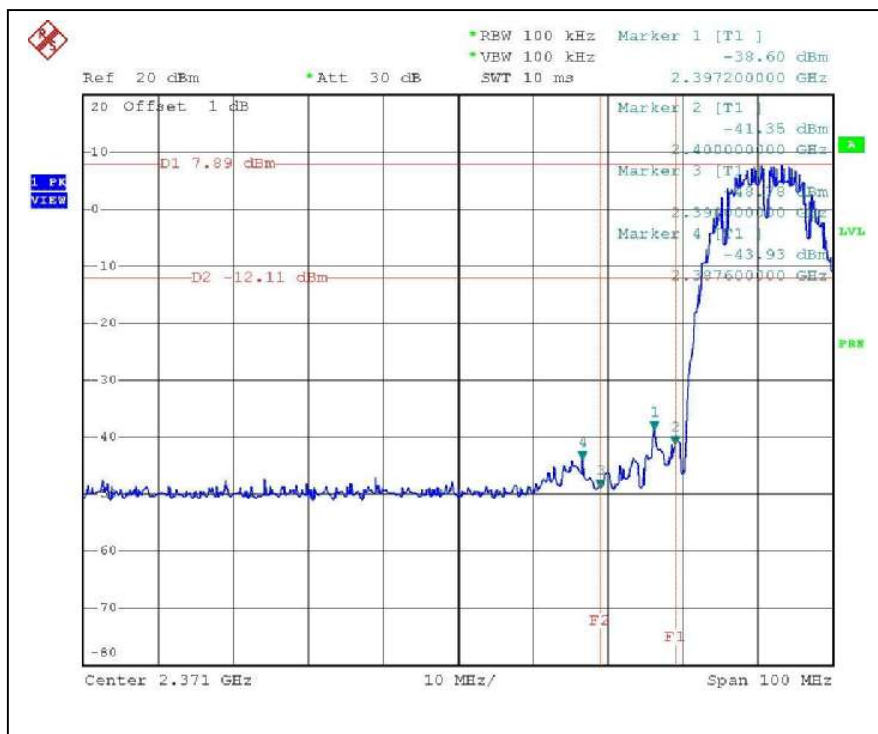
Same as Item 4.3.6

#### 4.6.6 TEST RESULTS

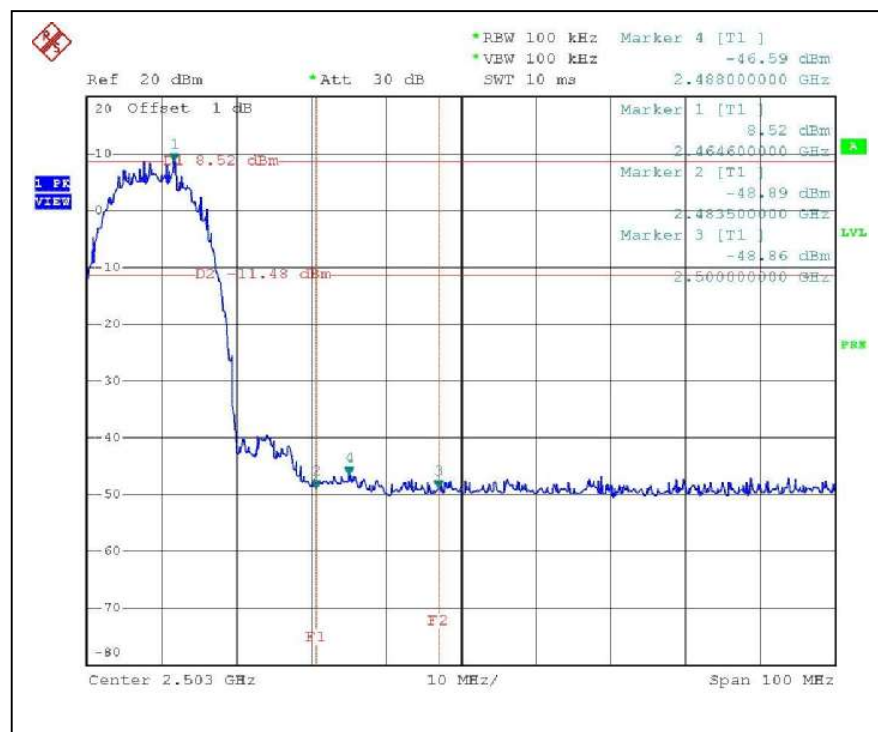
The spectrum plots are attached on the following 12 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

## 802.11b DSSS MODULATION:

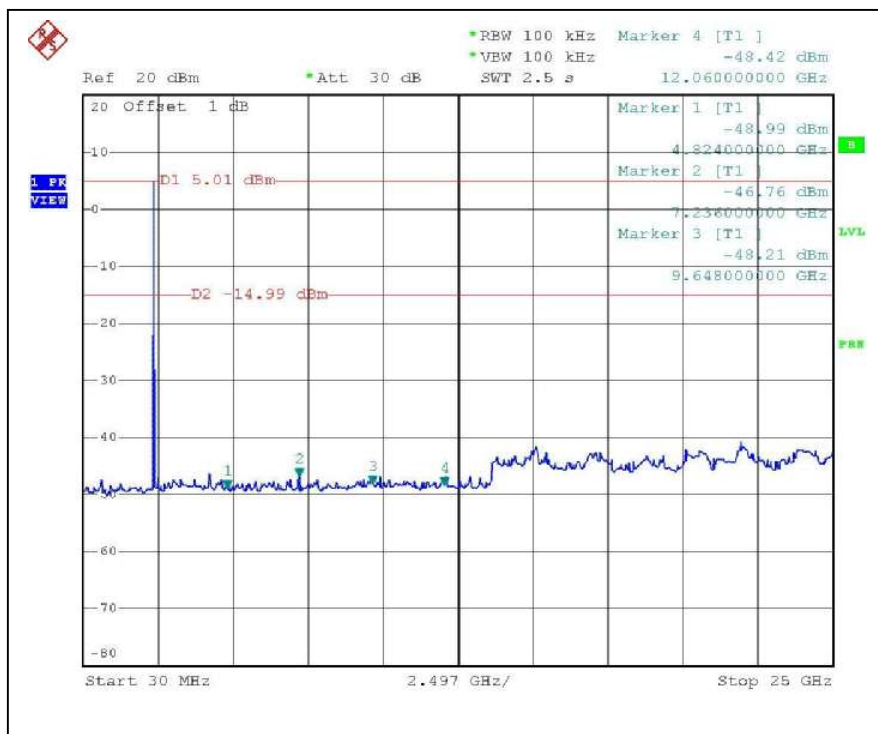
CH1



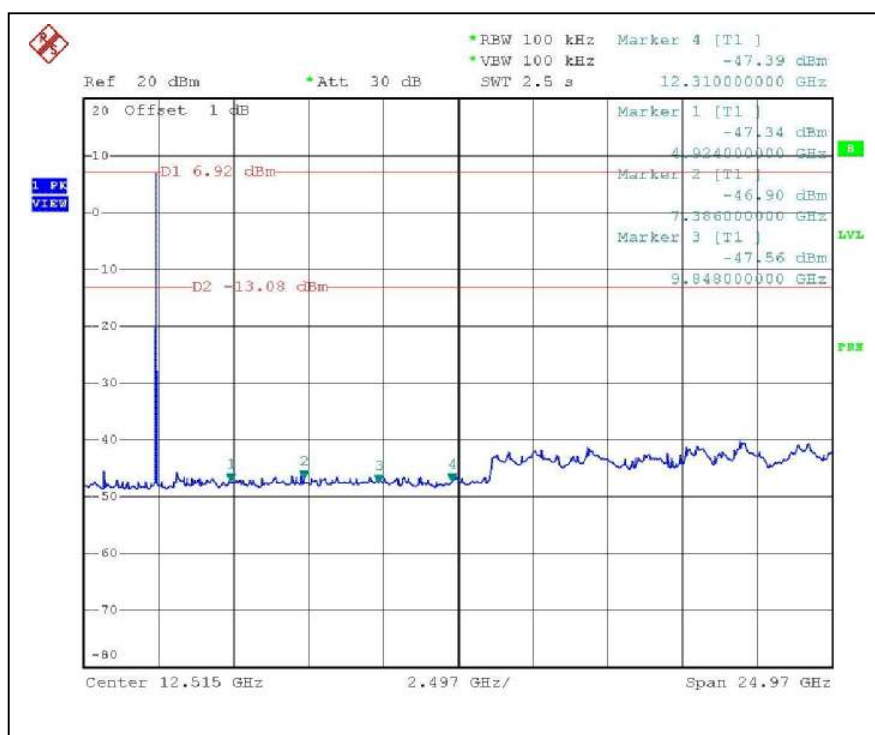
CH11



CH1

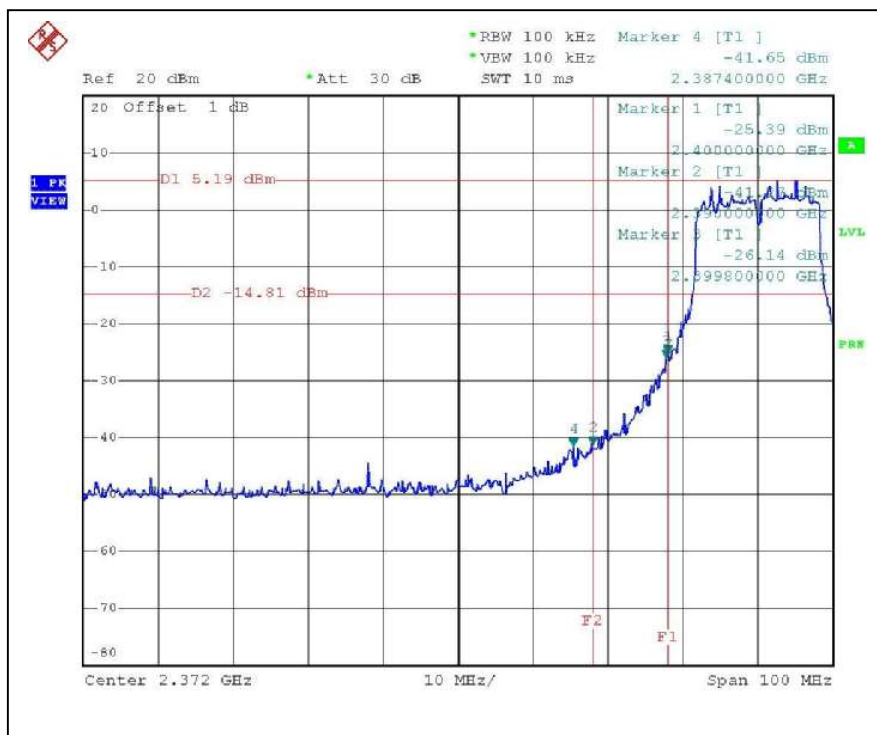


CH11

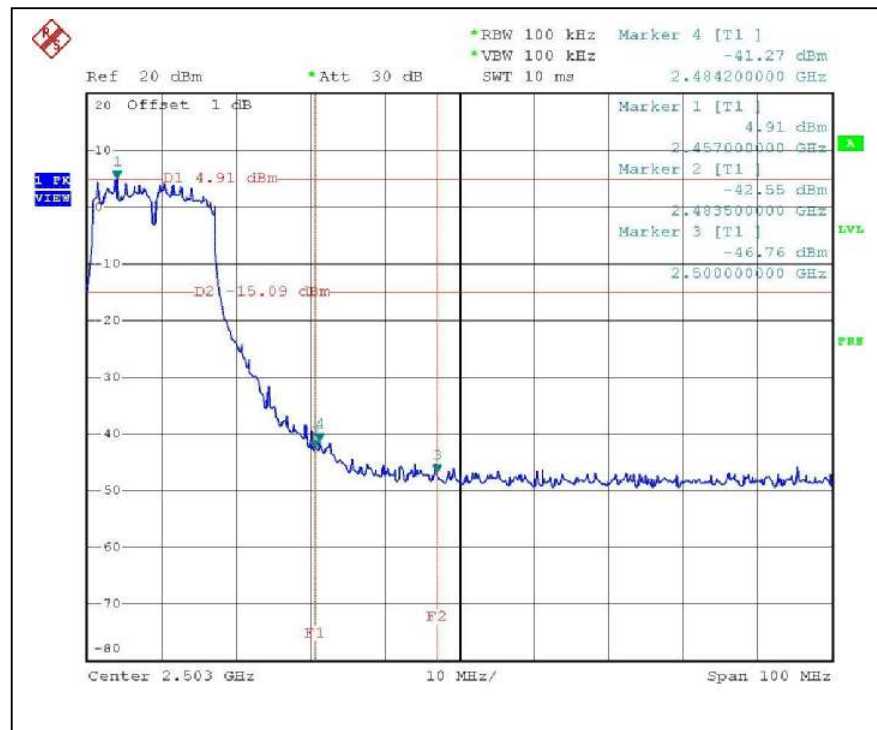


## 802.11g OFDM MODULATION:

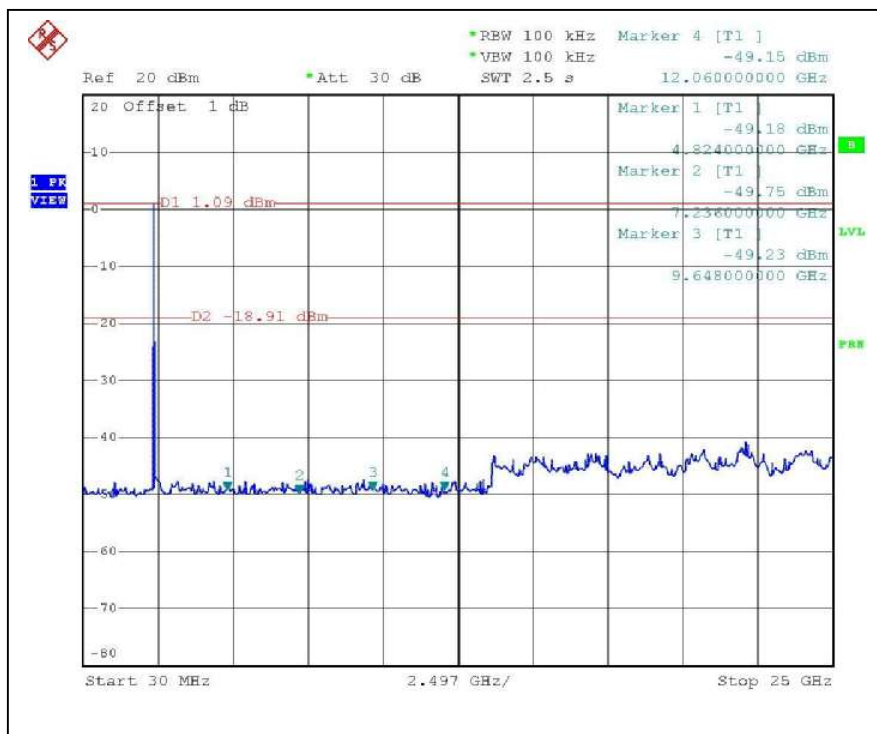
CH1



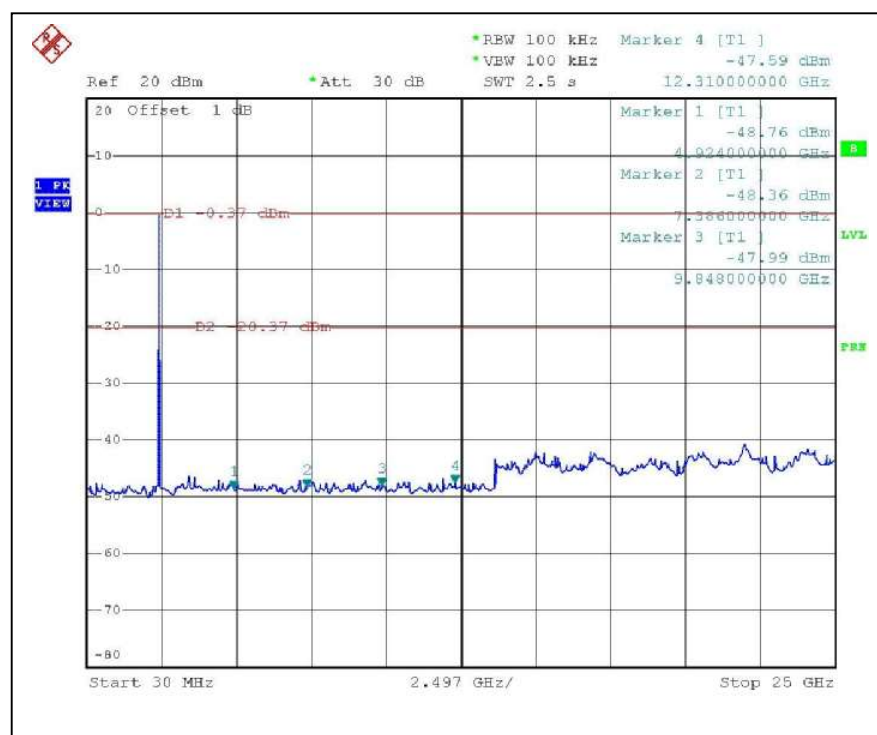
CH11



CH1



CH11



## 4.7 ANTENNA REQUIREMENT

### 4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 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 FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antennas used in this product are as below:

| No.: | Antenna Type   | Gain (dBi) | Cable loss (dB) | Net Gain (dBi) | Connector Type |
|------|----------------|------------|-----------------|----------------|----------------|
| 1    | Dipole Antenna | 9          | 0.7             | 8.3            | Reverse SMA    |
| 2    | Dipole Antenna | 5          | 0.7             | 4.3            | Reverse SMA    |

## 5 PHOTOGRAPHS OF THE TEST CONFIGURATION

### CONDUCTED EMISSION TEST



## RADIATED EMISSION TEST



## 6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025:

|                    |                      |
|--------------------|----------------------|
| <b>USA</b>         | FCC, UL, A2LA        |
| <b>Germany</b>     | TUV Rheinland        |
| <b>Japan</b>       | VCCI                 |
| <b>Norway</b>      | NEMKO                |
| <b>Canada</b>      | INDUSTRY CANADA, CSA |
| <b>R.O.C.</b>      | CNLA, BSMI, DGT      |
| <b>Netherlands</b> | Telefication         |
| <b>Singapore</b>   | PSB, GOST-ASIA (MOU) |
| <b>Russia</b>      | CERTIS (MOU)         |

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: [www.adt.com.tw/index.5/phtml](http://www.adt.com.tw/index.5/phtml).

If you have any comments, please feel free to contact us at the following:

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**Email:** [service@adt.com.tw](mailto:service@adt.com.tw)

**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

The address and road map of all our labs can be found in our web site also.

## **APPENDIX-A**

### **MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No any modifications are made to the EUT by the lab during the test.