# FCC TEST REPORT

**REPORT NO.:** RF970611H05
**MODEL NO.:** DIR-605
**RECEIVED:** June 11, 2008
**TESTED:** June 19 to July 10, 2008
**ISSUED:** Sep. 16, 2008

**APPLICANT:** D-Link Co.

**ADDRESS:** No.289, Shinhu 3rd Rd., Neihu District, Taipei City 114, Taiwan, R.O.C.

**ISSUED BY:** Advance Data Technology Corporation

**TEST LOCATION:** No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien, 307 Taiwan, R.O.C.

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# 1. CERTIFICATION

| | |
|---|---|
| **PRODUCT:** | Wireless N Router |
| **BRAND NAME:** | D-Link |
| **MODEL NO.:** | DIR-605 |
| **TEST SAMPLE:** | MASS-PRODUCTION |
| **TESTED:** | June 19 to July 10, 2008 |
| **APPLICANT:** | D-Link Co. |
| **STANDARDS:** | FCC Part 15, Subpart C (Section 15.247), ANSI C63.4-2003 |

The above equipment (Model: DIR-605) 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. 16, 2008
( Carol Liao, Specialist )

**TECHNICAL ACCEPTANCE** : , **DATE:** Sep. 16, 2008
Responsible for RF
( Hank Chung, Deputy Manager )

**APPROVED BY** : , **DATE:** Sep. 16, 2008
(May Chen, Deputy Manager )

## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247) | | | |
|---|---|---|---|
| **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 –15.45dB at 0.173MHz |
| 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(d) | Radiated Emissions<br>Limit: Table 15.209 | PASS | Meet the requirement of limit.<br>Minimum passing margin is –0.76dB at 2390.00MHz |
| 15.247(e) | Power Spectral Density<br>Limit: max. 8dBm | PASS | Meet the requirement of limit. |
| 15.247(d) | Band Edge Measurement<br>Limit: 20dB less than the peak value of fundamental frequency | PASS | Meet the requirement of limit. |

## 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in 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 |
|---|---|
| Conducted emissions | 2.44 dB |
| Radiated emissions (30MHz-1GHz) | 3.94 dB |
| Radiated emissions (1GHz -18GHz) | 2.33 dB |
| Radiated emissions (18GHz -40GHz) | 2.55 dB |

# 3. GENERAL INFORMATION

## 3.1 GENERAL DESCRIPTION OF EUT

| | |
|---|---|
| **PRODUCT** | Wireless N Router |
| **MODEL NO.** | DIR-605 |
| **FCC ID** | KA2DIR605A2 |
| **POWER SUPPLY** | DC 5V from switching adapter |
| **MODULATION TYPE** | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM |
| **MODULATION TECHNOLOGY** | DSSS, OFDM |
| **TRANSFER RATE** | 802.11b: 11 / 5.5 / 2 / 1Mbps<br>802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps<br>HT20 MCS0~7 (800ns GI):<br>65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps.<br>HT20 MCS8~15 (800ns GI):<br>130 / 117 / 104 / 78 / 52 / 39 / 26 / 13Mbps.<br>HT40 MCS0~7 (800ns GI):<br>135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps.<br>HT40 MCS8~15 (800ns GI):<br>270 / 243 / 216 / 162 / 108 / 81 / 54 / 27Mbps.<br>HT20 MCS0~7 (400ns GI):<br>72.2 / 65 / 57.8 / 43.3 / 28.9 / 21.7 / 14.4 / 7.2Mbps.<br>HT20 MCS8~15 (400ns GI):<br>144.444 / 130 / 115.556 / 86.667 / 57.778 / 43.333 / 28.889 / 14.444Mbps.<br>HT40 MCS0~7 (400ns GI):<br>150 / 135 / 120 / 90 / 60 / 45 / 30 / 15Mbps.<br>HT40 MCS8~15 (400ns GI):<br>300 / 270 / 240 / 180 / 120 / 90 / 60 / 30Mbps. |
| **FREQUENCY RANGE** | 802.11b & 802.11g: 2412 ~ 2462MHz |
| **NUMBER OF CHANNEL** | 11 for 802.11b, 802.11g, draft 802.11n (20MHz)<br>7 for draft 802.11n (40MHz) |
| **MAXIMUM OUTPUT POWER** | 802.11b: 74.131mW<br>802.11g: 98.175mW<br>draft 802.11n (20MHz): 172.411mW<br>draft 802.11n (40MHz): 117.672mW |
| **ANTENNA TYPE** | Please see note 1 ( on next page) |
| **DATA CABLE** | RJ45 Cable (Unshielded, 1.8m, Blue colour) |
| **I/O PORT** | Ethernet Port x 5 |

**NOTE:**

1. There are two antennas provided to this EUT, please refer to the following table:

| Transmitter Circuit | Antenna Type | Gain (dBi) | Antenna Connector | Note |
|---|---|---|---|---|
| Chain(0) | Dipole | 2.1 | MHF | TX & RX function |
| Chain(1) | Dipole | 2.0 | MHF | TX & RX function |

2. The EUT incorporates a MIMO function with 802.11b, 802.11g, draft 802.11n. Physically, the EUT provides two completed transmitter and two completed receivers.

3. The EUT is 2 * 2 spatial MIMO without beam forming function. The antenna configurations are two transmitter antennas and two receiver antennas, as there are 2 Dipole antennas. Spatial multiplexing modes for simultaneous transmission using 2 antennas, and for simultaneous receiver using 2 antennas. The 11b/g legacy mode is limited to single transmitter only.

4. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.

5. The EUT complies with draft 802.11n standards and backwards compatible with 802.11b, 802.11g products.

6. The EUT operates in the 2.4GHz frequency spectrum with data rate up to 300Mbps.

7. The EUT must be supplied with a power adapter as following:

| | |
|---|---|
| **Brand:** | D-Link |
| **Model No.:** | AF1805-A |
| **Input power :** | AC100-120V, 0.4A, 50-60Hz, 2PIN |
| **Output power :** | DC 5.0V, 2.5A<br>Cable:1.8m/unshielded/without core |

8. For radiated emissions test, the EUT was pre-tested in chamber under the following modes:

| Test Mode | Description |
|---|---|
| Mode A | Level-set (Put on tabletop) |
| **Mode B** | **Tower-set (Wall-mounted)** |

From the above modes, worse case was found in **Mode B**. Therefore only the test data of the mode was recorded in this report.

9. The EUT, operates in the 2.4GHz frequency range, lets you connect IEEE 802.11g or IEEE 802.11b and draft 802.11n technique devices to the network.

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

## 3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided for 802.11b, 802.11g, draft 802.11n (20MHz):

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

Seven channels are provided for draft 802.11n (40MHz):

| CHANNEL | FREQUENCY | CHANNEL | FREQUENCY |
|---|---|---|---|
| 1 | 2422MHz | 5 | 2442MHz |
| 2 | 2427MHz | 6 | 2447MHz |
| 3 | 2432MHz | 7 | 2452MHz |
| 4 | 2437MHz | | |

## 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

| EUT CONFIGURE MODE | APPLICABLE TO | | | | DESCRIPTION |
|---|---|---|---|---|---|
| | PLC | RE < 1G | RE ³ 1G | APCM | |
| - | √ | √ | √ | √ | - |

Where **PLC:** Power Line Conducted Emission **RE < 1G:** Radiated Emission below 1GHz

**RE ³ 1G:** Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

### ANTENNA COMBINATION MODE:

| COMBINATION MODE | OPERATION MODE | TX CHAIN(0) | TX CHAIN(1) |
|---|---|---|---|
| A | 802.11 b | ü | |
| B | 802.11 g | ü | |
| C | DRAFT 802.11n(20MHz) | ü | |
| D | | ü | ü |
| E | DRAFT 802.11n(40MHz) | ü | |
| F | | ü | ü |

Note:
1. The above information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
2. From above mode, the different modes were chosen for pretest.
3. Mode A, B, D & F the worst modes, was selected as representative mode for the report.

**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) | TX COMBINATION |
|---|---|---|---|---|---|---|
| 802.11n (20MHz) | 1 to 11 | 1 | OFDM | BPSK | 13 | D |

**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) | TX COMBINATION |
|---|---|---|---|---|---|---|
| 802.11n (20MHz) | 1 to 11 | 1 | OFDM | BPSK | 13 | D |

**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) | TX COMBINATION |
|---|---|---|---|---|---|---|
| 802.11b | 1 to 11 | 1, 6, 11 | DSSS | DBPSK | 1 | A |
| 802.11g | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6 | B |
| Draft 802.11n (20MHz) | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 13 | D |
| Draft 802.11n (40MHz) | 1 to 7 | 1, 4, 7 | OFDM | BPSK | 27 | F |

**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) | TX COMBINATION |
|---|---|---|---|---|---|---|
| 802.11b | 1 to 11 | 1, 11 | DSSS | DBPSK | 1 | A |
| 802.11g | 1 to 11 | 1, 11 | OFDM | BPSK | 6 | B |
| Draft 802.11n (20MHz) | 1 to 11 | 1, 11 | OFDM | BPSK | 13 | D |
| Draft 802.11n (40MHz) | 1 to 7 | 1, 7 | OFDM | BPSK | 27 | F |

**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) | TX COMBINATION |
|---|---|---|---|---|---|---|
| 802.11b | 1 to 11 | 1, 6, 11 | DSSS | DBPSK | 1 | A |
| 802.11g | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6 | B |
| Draft 802.11n (20MHz) | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 13 | D |
| Draft 802.11n (40MHz) | 1 to 7 | 1, 4, 7 | OFDM | BPSK | 27 | F |

## 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless N Router. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart C. (15.247)**
**ANSI C63.4-2003**

All test items 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 FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

## 3.4 DESCRIPTION OF SUPPORT UNITS

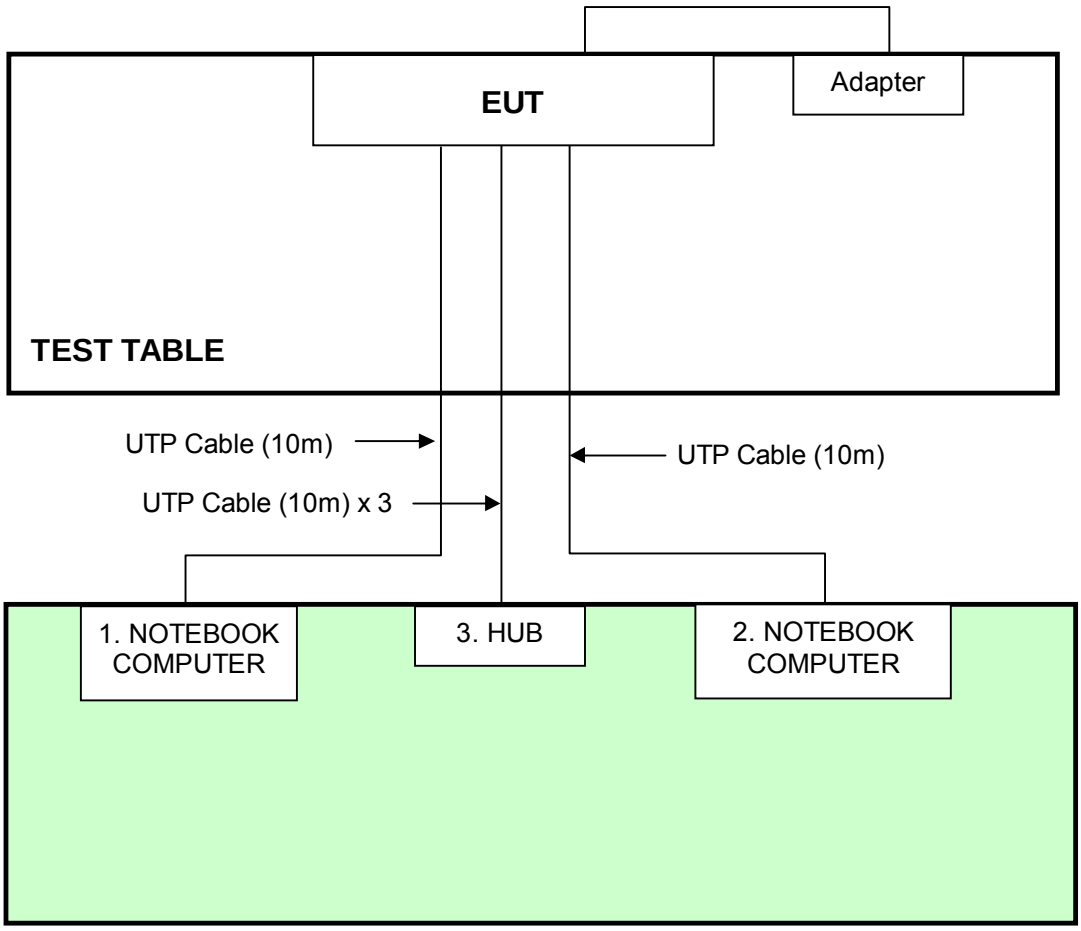
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| NO. | PRODUCT | BRAND | MODEL NO. | SERIAL NO. | FCC ID |
|---|---|---|---|---|---|
| 1 | NOTEBOOK COMPUTER | DELL | PP18L | 6976685584 | FCC DoC |
| 2 | NOTEBOOK COMPUTER | DELL | PP19L | CN-OHC416-70166-5CA-0448 | PIW632500516610 |
| 3 | Switch HUB | AVSYS | 110H8 | 01-20E-000002 | FCC DoC |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|---|---|
| 1 | NA |
| 2 | NA |
| 3 | NA |

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

## 3.5 CONFIGURATION OF SYSTEM UNDER TEST



# 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. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/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 | Feb. 28, 2009 |
| Line-Impedance Stabilization Network(for EUT) | ENV-216 | 100071 | Nov. 26, 2008 |
| Line-Impedance Stabilization Network(for Peripheral) | ESH3-Z5 | 848773/004 | Nov. 08, 2008 |
| RF Cable (JYEBAO) | 5DFB | COBCAB-001 | Jul. 23, 2009 |
| 50 ohms Terminator | 50 | 3 | Nov. 15, 2008 |
| 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

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT 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.

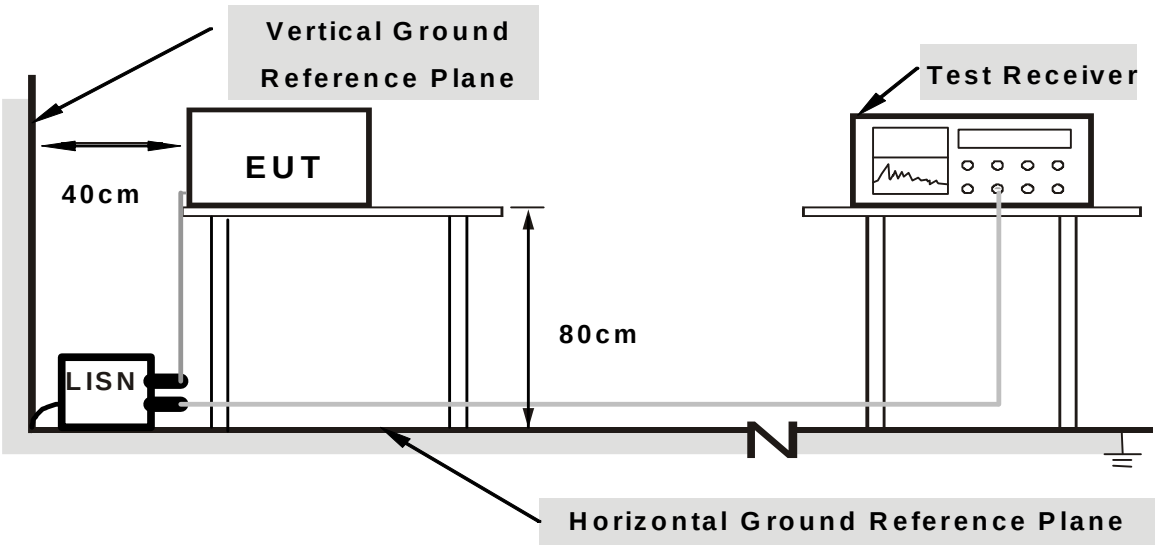
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.1.5 TEST SETUP




**Note: 1.Support units were connected to second LISN.**
**2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

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

### 4.1.6 EUT OPERATING CONDITIONS

1. Placed the EUT on testing table.
2. Prepared other computer systems (support unit 1 ~ 3) to act as communication partners and placed them outside of testing area.
3. The communication partner run test program “RT2880_V1_2_0_8” to enable EUT under specific wireless channel transmitting condition.

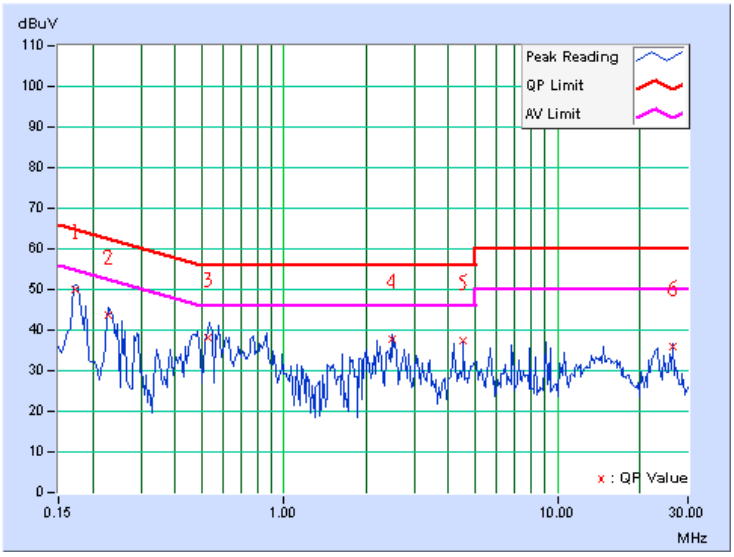
## 4.1.7 TEST RESULTS

### DRAFT 802.11n (20MHz) OFDM MODULATION

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 1 | PHASE | Line (L) |
| MODULATION TYPE | BPSK | 6dB BANDWIDTH | 9 kHz |
| TRANSFER RATE | 13Mbps | INPUT POWER (SYSTEM) | 120Vac, 60 Hz |
| ENVIRONMENTAL CONDITIONS | 24deg. C, 64%RH, 965hPa | TESTED BY | Phoenix Huang |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| **1** | **0.173** | **9.65** | **39.70** | **-** | **49.35** | **-** | **64.79** | **54.79** | **-15.45** | **-** |
| 2 | 0.228 | 9.65 | 33.32 | - | 42.97 | - | 62.52 | 52.52 | -19.55 | - |
| 3 | 0.530 | 9.68 | 27.82 | - | 37.50 | - | 56.00 | 46.00 | -18.50 | - |
| 4 | 2.477 | 9.84 | 27.44 | - | 37.28 | - | 56.00 | 46.00 | -18.72 | - |
| 5 | 4.539 | 9.81 | 27.07 | - | 36.88 | - | 56.00 | 46.00 | -19.12 | - |
| 6 | 26.488 | 10.22 | 25.74 | - | 35.96 | - | 60.00 | 50.00 | -24.04 | - |

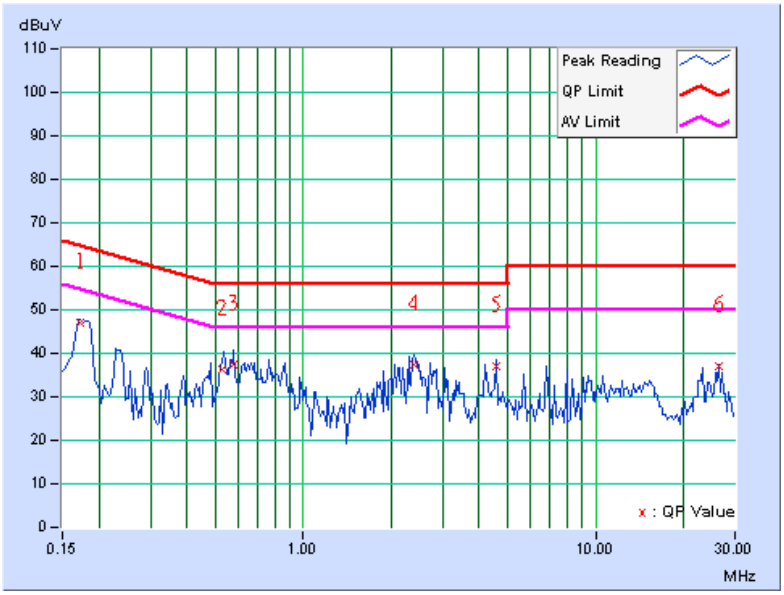
**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value =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



| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 1 | PHASE | Neutral (N) |
| MODULATION TYPE | DBPSK | 6dB BANDWIDTH | 9 kHz |
| TRANSFER RATE | 1Mbps | INPUT POWER (SYSTEM) | 120Vac, 60 Hz |
| ENVIRONMENTAL CONDITIONS | 24deg. C, 64%RH, 965hPa | TESTED BY | Phoenix Huang |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.173 | 9.65 | 36.57 | - | 46.22 | - | 64.79 | 54.79 | -18.58 | - |
| 2 | 0.530 | 9.67 | 25.97 | - | 35.64 | - | 56.00 | 46.00 | -20.36 | - |
| 3 | 0.580 | 9.68 | 26.96 | - | 36.64 | - | 56.00 | 46.00 | -19.36 | - |
| 4 | 2.391 | 9.84 | 27.03 | - | 36.87 | - | 56.00 | 46.00 | -19.13 | - |
| 5 | 4.547 | 9.82 | 26.74 | - | 36.56 | - | 56.00 | 46.00 | -19.44 | - |
| 6 | 26.488 | 10.40 | 26.81 | - | 37.21 | - | 60.00 | 50.00 | -22.79 | - |

**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(kHz) | 300 |
| 0.490-1.705 | 24000/F(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 15, 2009 |
| HP Pre_Amplifier | 8449B | 3008A01922 | Oct. 04, 2008 |
| ROHDE & SCHWARZ Test Receiver | ESCS30 | 100375 | Mar. 31, 2009 |
| SCHWARZBECK TRILOG Broadband Antenna | VULB 9168 | 138 | April 29, 2009 |
| Schwarzbeck Horn_Antenna | BBHA9120 | D124 | Dec. 16, 2008 |
| Schwarzbeck Horn_Antenna | BBHA 9170 | BBHA9170153 | Jan. 27, 2009 |
| RF Switches (ARNITSU) | CS-201 | 1565157 | Aug. 13, 2009 |
| RF CABLE (Chaintek) | SF102 | 22054-2 | Dec. 06. 2008 |
| RF Cable | 8DFB | STCCAB-30M-1 GHz | Oct. 09, 2008 |
| Software | ADT_Radiated_V 7.6.15.8 | 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 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 3789C-3.

### 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 3 meter semi- anechoic. 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 the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

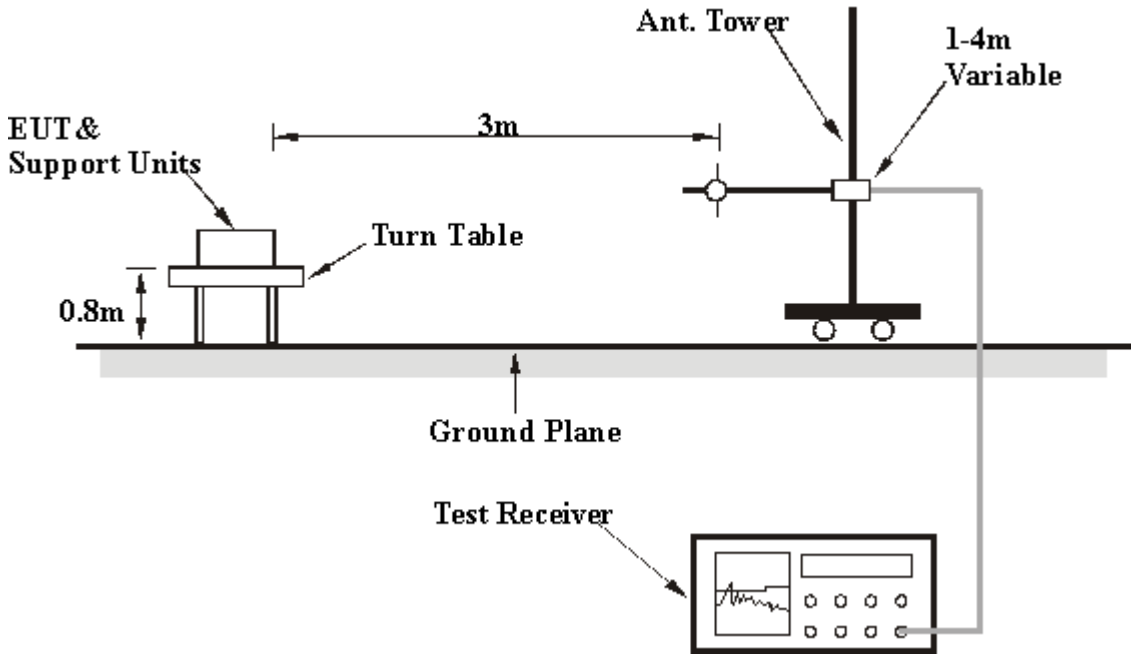
**NOTE:**

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 DEVIATION FROM TEST STANDARD

No deviation

## 4.2.5 TEST SETUP




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

## 4.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

## Below 1GHz Test Data

### 4.2.7 TEST RESULTS

**BELOW 1GHz WORST-CASE DATA：DRAFT 802.11n (20MHz) OFDM MODULATION**

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 1 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 27deg. C, 66%RH<br>965hPa | TESTED BY | Wen Yu |

| 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 | 133.34 | 27.24 QP | 43.50 | -16.26 | 1.34 H | 275 | 13.41 | 13.83 |
| 2 | 266.67 | 35.70 QP | 46.00 | -10.30 | 1.42 H | 146 | 21.45 | 14.25 |
| 3 | 400.00 | 36.63 QP | 46.00 | -9.37 | 1.00 H | 45 | 18.58 | 18.05 |
| 4 | 480.00 | 29.91 QP | 46.00 | -16.09 | 1.35 H | 162 | 9.33 | 20.58 |
| 5 | 533.33 | 36.12 QP | 46.00 | -9.88 | 1.38 H | 206 | 15.18 | 20.94 |
| 6 | 666.66 | 30.34 QP | 46.00 | -15.66 | 1.00 H | 203 | 5.86 | 24.48 |
| 7 | 800.00 | 37.13 QP | 46.00 | -8.87 | 1.00 H | 21 | 9.08 | 28.05 |
| 8 | 933.33 | 34.64 QP | 46.00 | -11.36 | 1.00 H | 21 | 5.12 | 29.52 |

| 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 | 43.34 | 36.04 QP | 40.00 | -3.96 | 1.00 V | 198 | 20.43 | 15.61 |
| 2 | 108.78 | 38.16 QP | 43.50 | -5.34 | 1.00 V | 105 | 26.27 | 11.89 |
| 3 | 133.33 | 31.86 QP | 43.50 | -11.64 | 1.00 V | 93 | 18.03 | 13.83 |
| 4 | 266.66 | 31.86 QP | 46.00 | -14.14 | 1.00 V | 268 | 17.61 | 14.25 |
| 5 | 400.00 | 39.34 QP | 46.00 | -6.66 | 1.46 V | 356 | 21.29 | 18.05 |
| 6 | 533.33 | 37.04 QP | 46.00 | -8.96 | 1.00 V | 42 | 16.10 | 20.94 |
| 7 | 666.66 | 30.97 QP | 46.00 | -15.03 | 1.29 V | 207 | 6.49 | 24.48 |
| 8 | 800.00 | 36.23 QP | 46.00 | -9.77 | 1.00 V | 178 | 8.18 | 28.05 |
| 9 | 933.33 | 31.67 QP | 46.00 | -14.33 | 1.00 V | 322 | 2.15 | 29.52 |

**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.

## Above 1GHz Test Data

### 4.2.8 TEST RESULTS

#### 802.11b DSSS MODULATION

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 1 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | 2386.160 | 57.25 PK | 74.00 | -16.75 | 1.29 H | 321 | 26.87 | 30.38 |
| 2 | 2386.160 | 46.16 AV | 54.00 | -7.84 | 1.29 H | 321 | 15.78 | 30.38 |
| 3 | *2412.000 | 103.70 PK | | | 1.27 H | 323 | 73.21 | 30.49 |
| 4 | *2412.000 | 98.75 AV | | | 1.27 H | 323 | 68.26 | 30.49 |
| 5 | 4824.000 | 51.76 PK | 74.00 | -22.24 | 1.34 H | 202 | 16.07 | 35.69 |
| 6 | 4824.000 | 48.04 AV | 54.00 | -5.96 | 1.34 H | 202 | 12.35 | 35.69 |
| 7 | 7236.000 | 56.76 PK | 74.00 | -17.24 | 1.81 H | 235 | 14.52 | 42.24 |
| 8 | 7236.000 | 47.15 AV | 54.00 | -6.85 | 1.81 H | 235 | 4.91 | 42.24 |
| 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 | 2386.000 | 63.17 PK | 74.00 | -10.83 | 1.50 V | 256 | 32.79 | 30.38 |
| 2 | 2386.000 | 52.95 AV | 54.00 | -1.05 | 1.50 V | 256 | 22.57 | 30.38 |
| 3 | *2412.000 | 110.31 PK | | | 1.20 V | 9 | 79.82 | 30.49 |
| 4 | *2412.000 | 106.92 AV | | | 1.20 V | 9 | 76.43 | 30.49 |
| 5 | 4824.000 | 51.21 PK | 74.00 | -22.79 | 1.33 V | 184 | 15.52 | 35.69 |
| 6 | 4824.000 | 47.74 AV | 54.00 | -6.26 | 1.33 V | 184 | 12.05 | 35.69 |
| 7 | 7236.000 | 54.30 PK | 74.00 | -19.70 | 1.32 V | 186 | 12.06 | 42.24 |
| 8 | 7236.000 | 43.91 AV | 54.00 | -10.09 | 1.32 V | 186 | 1.67 | 42.24 |

**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. " * ": Fundamental frequency.

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 6 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH 965hPa | TESTED BY | Phoenix Huang |

| 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 | *2437.000 | 103.07 PK | | | 1.25 H | 322 | 72.46 | 30.61 |
| 2 | *2437.000 | 98.01 AV | | | 1.25 H | 322 | 67.40 | 30.61 |
| 3 | 4874.000 | 51.35 PK | 74.00 | -22.65 | 1.43 H | 113 | 15.55 | 35.80 |
| 4 | 4874.000 | 46.44 AV | 54.00 | -7.56 | 1.43 H | 113 | 10.64 | 35.80 |
| 5 | 7311.000 | 55.90 PK | 74.00 | -18.10 | 1.80 H | 234 | 13.38 | 42.52 |
| 6 | 7311.000 | 46.04 AV | 54.00 | -7.96 | 1.80 H | 234 | 3.52 | 42.52 |
| 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 | *2437.000 | 112.47 PK | | | 1.14 V | 18 | 81.86 | 30.61 |
| 2 | *2437.000 | 107.84 AV | | | 1.14 V | 18 | 77.23 | 30.61 |
| 3 | 4874.000 | 53.20 PK | 74.00 | -20.80 | 1.11 V | 225 | 17.40 | 35.80 |
| 4 | 4874.000 | 50.48 AV | 54.00 | -3.52 | 1.11 V | 225 | 14.68 | 35.80 |
| 5 | 7311.000 | 53.37 PK | 74.00 | -20.63 | 1.53 V | 203 | 10.85 | 42.52 |
| 6 | 7311.000 | 42.31 AV | 54.00 | -11.69 | 1.53 V | 203 | -0.21 | 42.52 |

**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. " * ": Fundamental frequency.

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 11 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | *2462.000 | 104.56 PK | | | 1.29 H | 324 | 73.84 | 30.72 |
| 2 | *2462.000 | 99.89 AV | | | 1.29 H | 324 | 69.17 | 30.72 |
| 3 | 2487.860 | 58.14 PK | 74.00 | -15.86 | 1.28 H | 317 | 27.30 | 30.84 |
| 4 | 2487.860 | 46.63 AV | 54.00 | -7.37 | 1.28 H | 317 | 15.79 | 30.84 |
| 5 | 4924.000 | 51.00 PK | 74.00 | -23.00 | 1.34 H | 308 | 15.10 | 35.90 |
| 6 | 4924.000 | 45.93 AV | 54.00 | -8.07 | 1.34 H | 308 | 10.03 | 35.90 |
| 7 | 7386.000 | 54.71 PK | 74.00 | -19.29 | 1.81 H | 230 | 11.91 | 42.80 |
| 8 | 7386.000 | 44.32 AV | 54.00 | -9.68 | 1.81 H | 230 | 1.52 | 42.80 |
| 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 | *2462.000 | 111.41 PK | | | 1.18 V | 343 | 80.69 | 30.72 |
| 2 | *2462.000 | 107.14 AV | | | 1.18 V | 343 | 76.42 | 30.72 |
| 3 | 2487.000 | 63.30 PK | 74.00 | -10.70 | 1.18 V | 12 | 32.47 | 30.83 |
| 4 | 2487.000 | 52.72 AV | 54.00 | -1.28 | 1.18 V | 12 | 21.89 | 30.83 |
| 5 | 4924.000 | 52.32 PK | 74.00 | -21.68 | 1.33 V | 185 | 16.42 | 35.90 |
| 6 | 4924.000 | 48.22 AV | 54.00 | -5.78 | 1.33 V | 185 | 12.32 | 35.90 |
| 7 | 7386.000 | 53.62 PK | 74.00 | -20.38 | 1.35 V | 247 | 10.82 | 42.80 |
| 8 | 7386.000 | 41.96 AV | 54.00 | -12.04 | 1.35 V | 247 | -0.84 | 42.80 |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

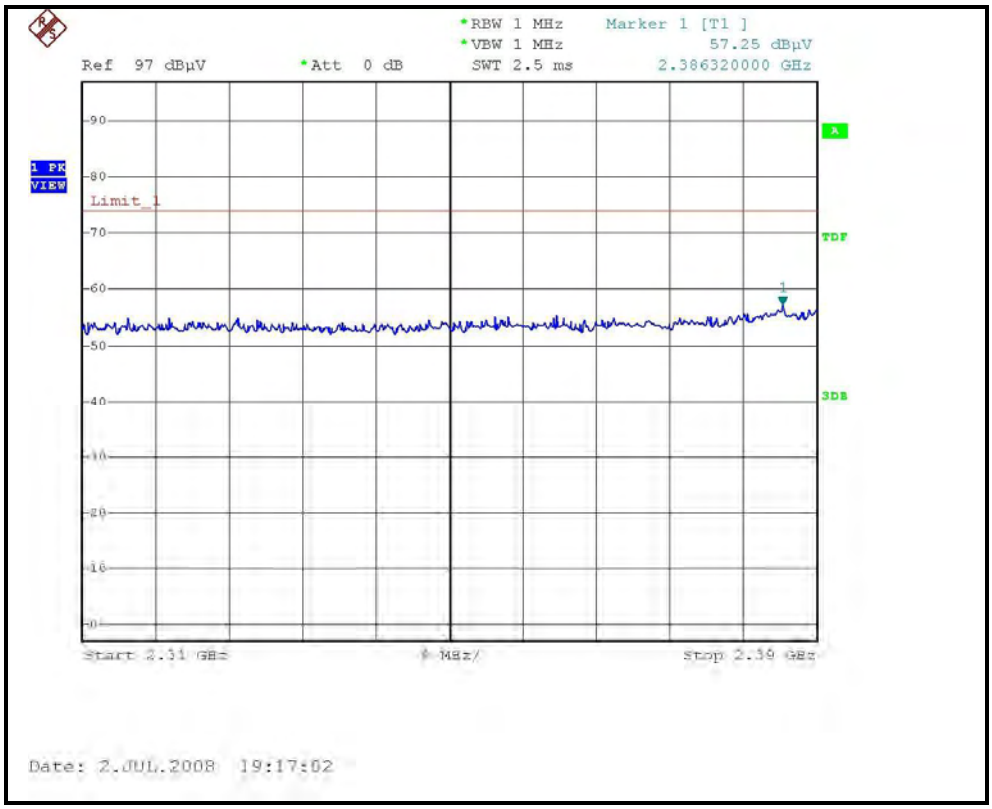
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

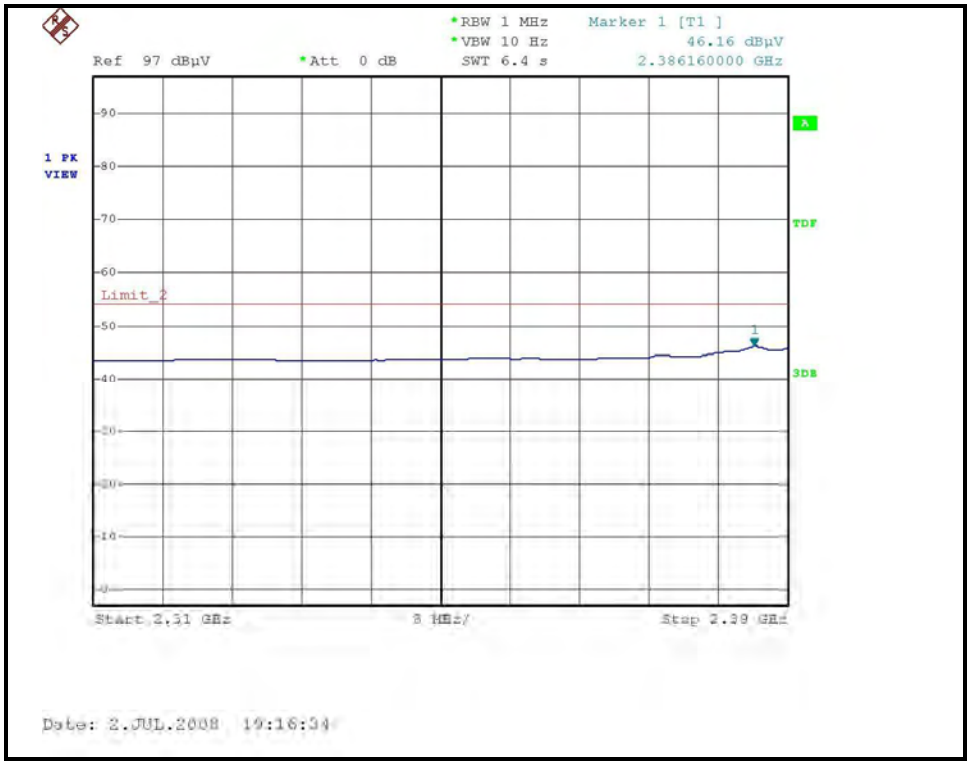
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

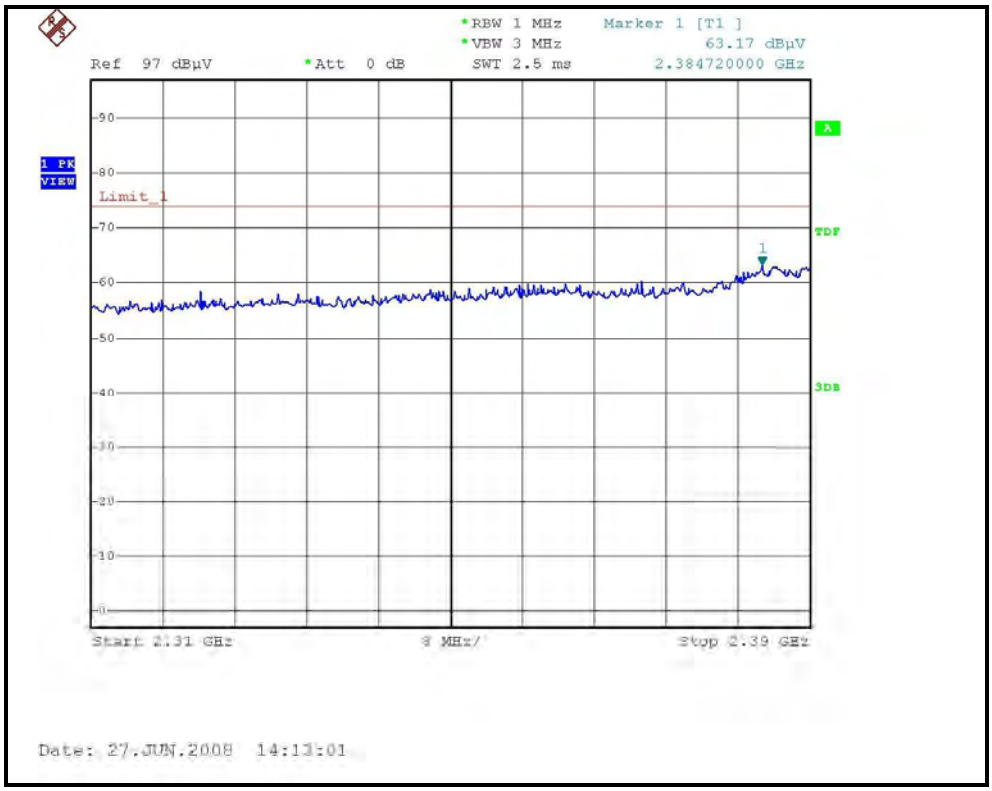
5. " * ": Fundamental frequency.

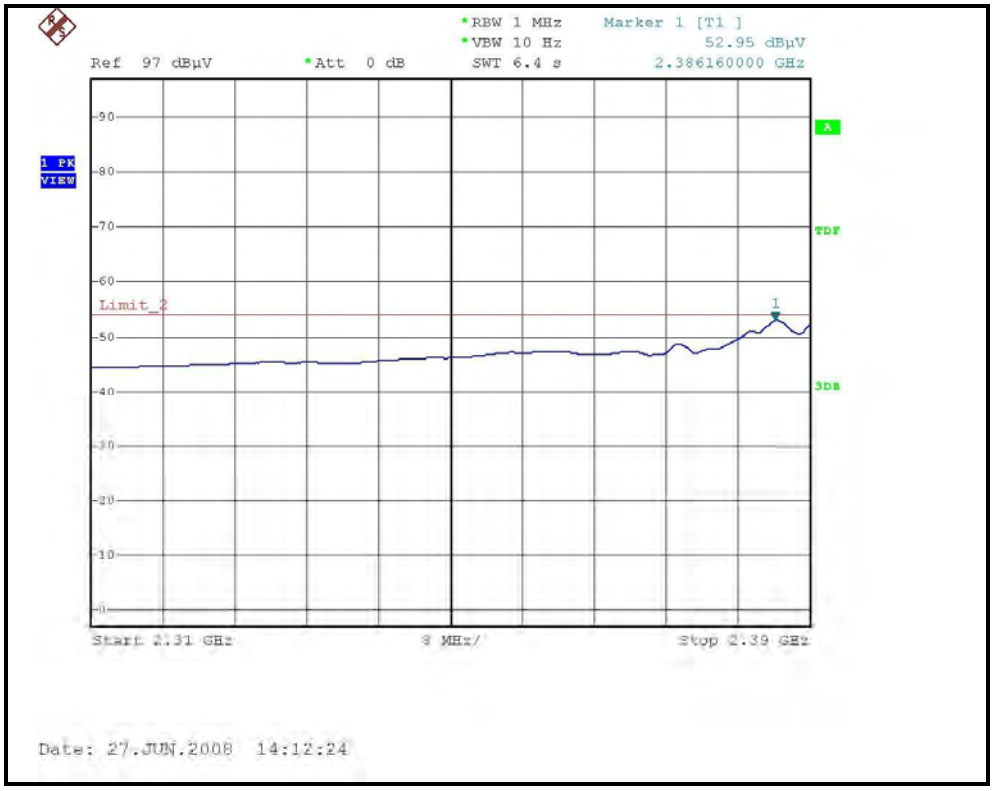
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL )



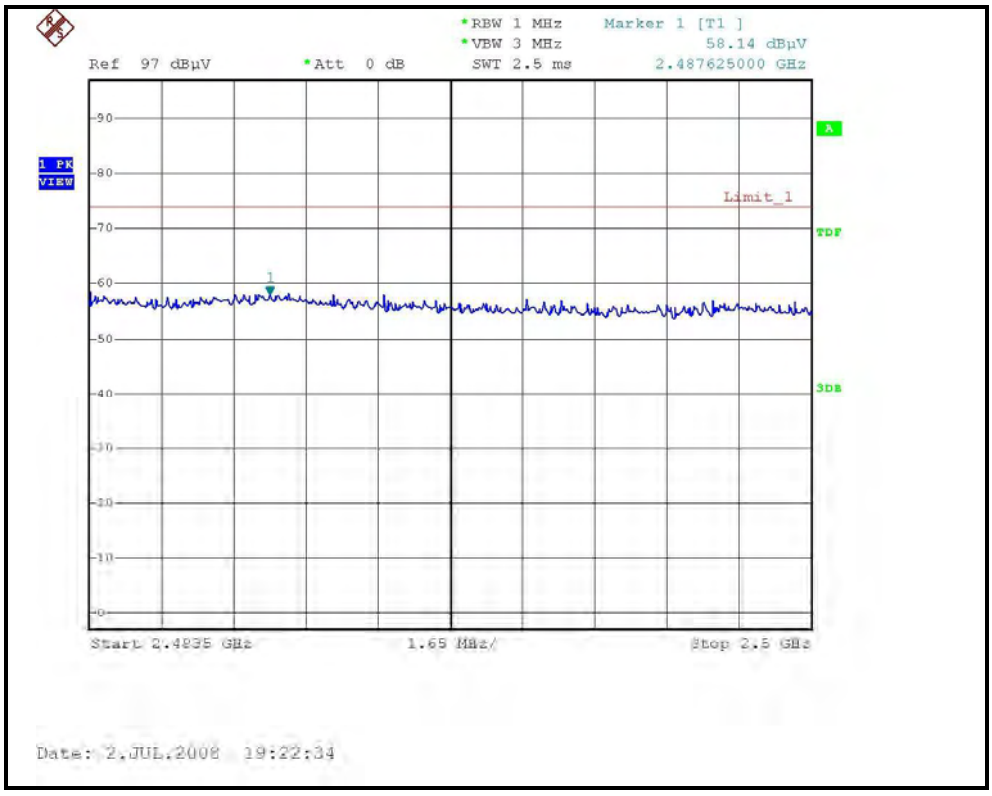



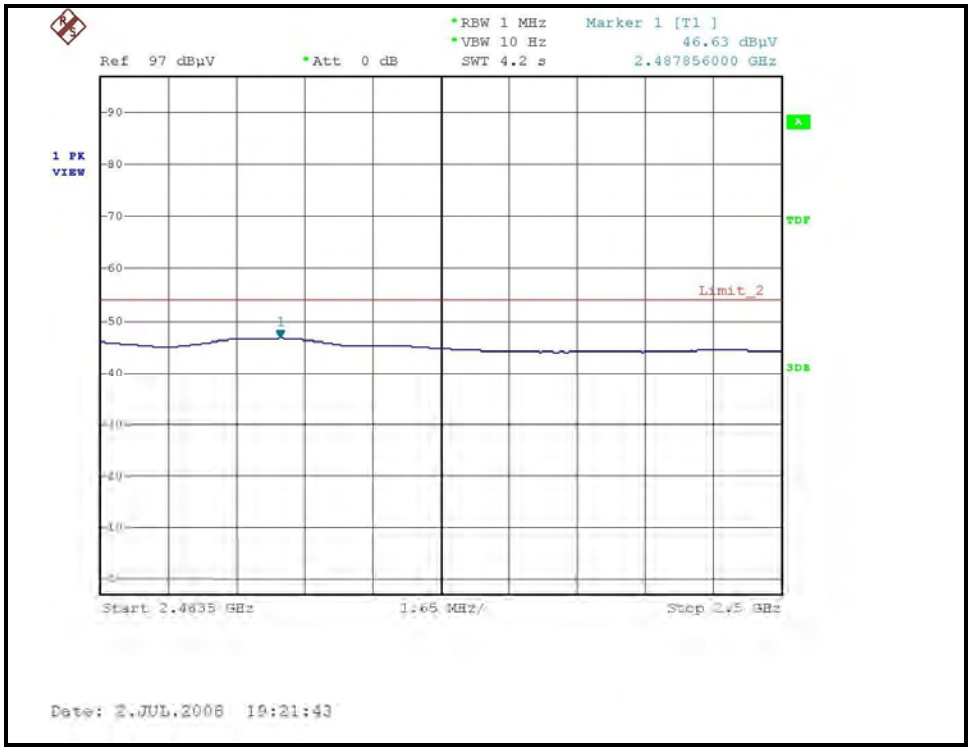
RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL )



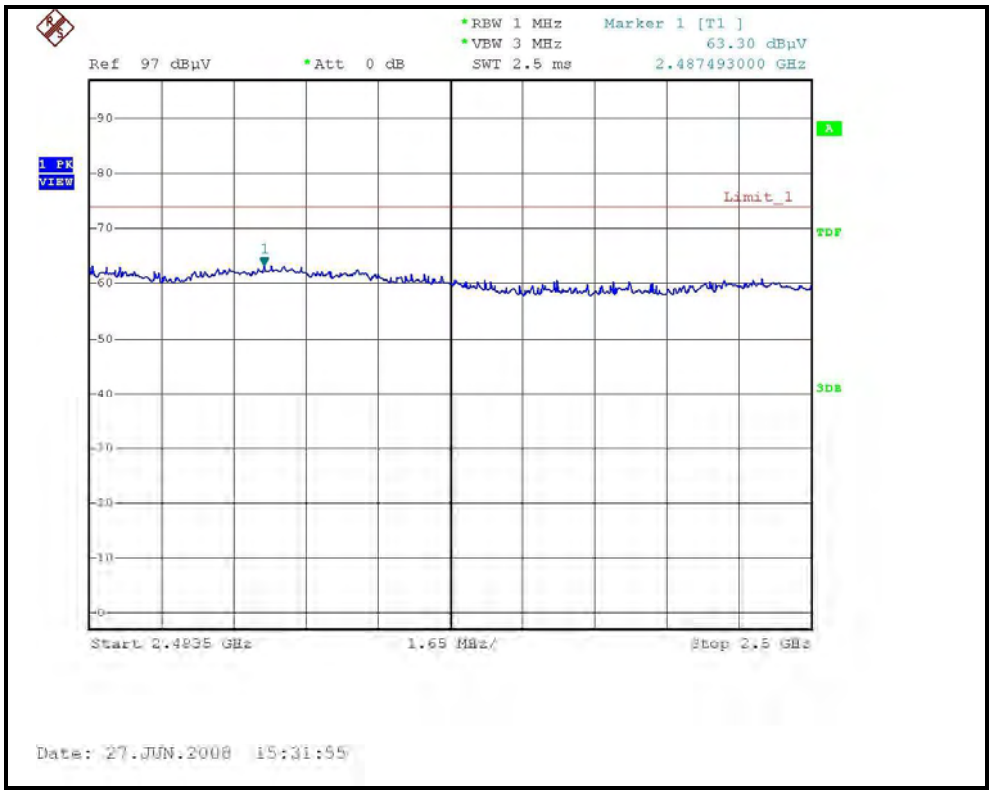



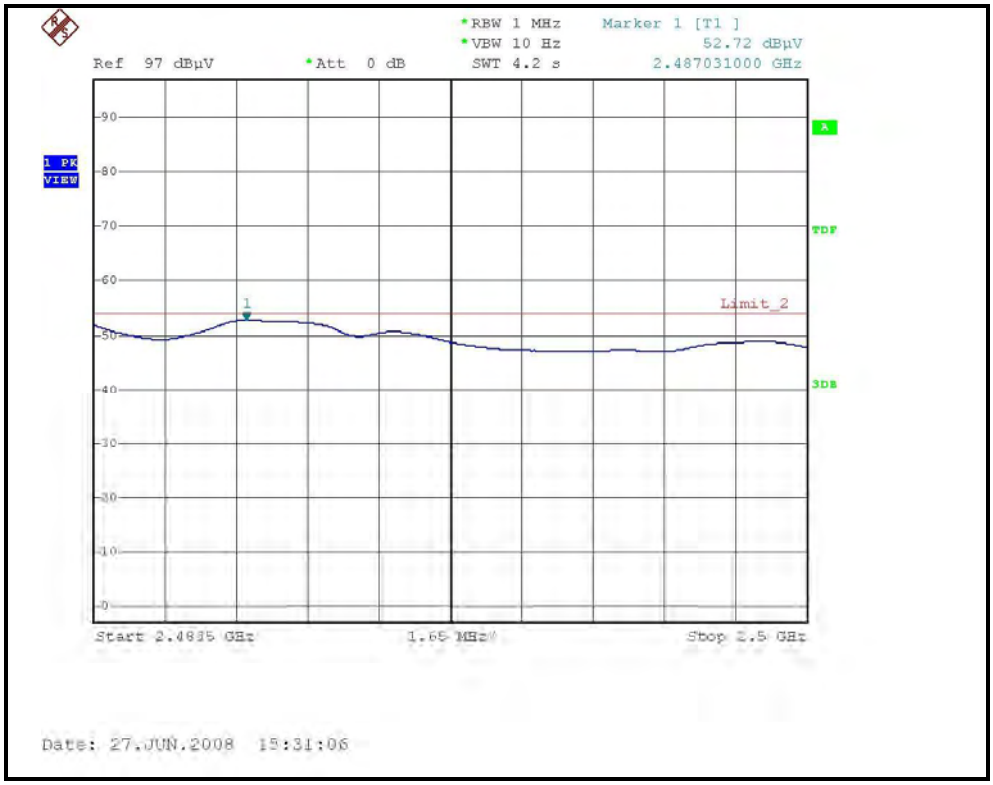
RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL )



RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL )



## 802.11g OFDM MODULATION

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 1 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH 965hPa | TESTED BY | Phoenix Huang |

| 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 | 2390.000 | 62.35 PK | 74.00 | -11.65 | 1.40 H | 321 | 31.95 | 30.40 |
| 2 | 2390.000 | 46.24 AV | 54.00 | -7.76 | 1.40 H | 321 | 15.84 | 30.40 |
| 3 | *2412.000 | 103.24 PK | | | 1.38 H | 324 | 72.75 | 30.49 |
| 4 | *2412.000 | 92.95 AV | | | 1.38 H | 324 | 62.46 | 30.49 |
| 5 | 4824.000 | 57.69 PK | 74.00 | -16.31 | 1.80 H | 238 | 22.00 | 35.69 |
| 6 | 4824.000 | 42.54 AV | 54.00 | -11.46 | 1.80 H | 238 | 6.85 | 35.69 |
| 7 | 7236.000 | 49.50 PK | 74.00 | -24.50 | 1.22 H | 209 | 7.26 | 42.24 |
| 8 | 7236.000 | 34.98 AV | 54.00 | -19.02 | 1.22 H | 209 | -7.26 | 42.24 |
| 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 | 2390.000 | 71.76 PK | 74.00 | -2.24 | 1.19 V | 10 | 41.37 | 30.40 |
| 2 | 2390.000 | 52.42 AV | 54.00 | -1.58 | 1.19 V | 10 | 22.02 | 30.40 |
| 3 | *2412.000 | 111.93 PK | | | 1.20 V | 12 | 81.44 | 30.49 |
| 4 | *2412.000 | 101.47 AV | | | 1.20 V | 12 | 70.98 | 30.49 |
| 5 | 4824.000 | 50.67 PK | 74.00 | -23.33 | 1.15 V | 159 | 14.98 | 35.69 |
| 6 | 4824.000 | 37.10 AV | 54.00 | -16.90 | 1.15 V | 159 | 1.41 | 35.69 |
| 7 | 7236.000 | 54.75 PK | 74.00 | -19.25 | 1.36 V | 207 | 12.51 | 42.24 |
| 8 | 7236.000 | 40.33 AV | 54.00 | -13.67 | 1.36 V | 207 | -1.91 | 42.24 |

**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. " * ": Fundamental frequency.

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 6 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | *2437.000 | 104.80 PK | | | 1.41 H | 252 | 74.19 | 30.61 |
| 2 | *2437.000 | 94.10 AV | | | 1.41 H | 252 | 63.49 | 30.61 |
| 3 | 4874.000 | 48.64 PK | 74.00 | -25.36 | 1.34 H | 147 | 12.84 | 35.80 |
| 4 | 4874.000 | 35.50 AV | 54.00 | -18.50 | 1.34 H | 147 | -0.30 | 35.80 |
| 5 | 7311.000 | 57.30 PK | 74.00 | -16.70 | 1.81 H | 231 | 14.78 | 42.52 |
| 6 | 7311.000 | 43.32 AV | 54.00 | -10.68 | 1.81 H | 231 | 0.80 | 42.52 |
| 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 | *2437.000 | 113.72 PK | | | 1.14 V | 16 | 83.11 | 30.61 |
| 2 | *2437.000 | 103.16 AV | | | 1.14 V | 16 | 72.55 | 30.61 |
| 3 | 4874.000 | 50.97 PK | 74.00 | -23.03 | 1.14 V | 162 | 15.17 | 35.80 |
| 4 | 4874.000 | 37.45 AV | 54.00 | -16.55 | 1.14 V | 162 | 1.65 | 35.80 |
| 5 | 7311.000 | 54.68 PK | 74.00 | -19.32 | 1.24 V | 246 | 12.16 | 42.52 |
| 6 | 7311.000 | 39.70 AV | 54.00 | -14.30 | 1.24 V | 246 | -2.82 | 42.52 |

**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. " * ": Fundamental frequency.

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 11 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | *2462.000 | 104.00 PK | | | 1.06 H | 227 | 73.28 | 30.72 |
| 2 | *2462.000 | 93.30 AV | | | 1.06 H | 227 | 62.58 | 30.72 |
| 3 | 2483.500 | 65.62 PK | 74.00 | -8.38 | 1.05 H | 230 | 34.80 | 30.82 |
| 4 | 2483.500 | 47.23 AV | 54.00 | -6.77 | 1.05 H | 230 | 16.41 | 30.82 |
| 5 | 4924.000 | 47.52 PK | 74.00 | -26.48 | 1.30 H | 133 | 11.62 | 35.90 |
| 6 | 4924.000 | 34.67 AV | 54.00 | -19.33 | 1.30 H | 133 | -1.23 | 35.90 |
| 7 | 7386.000 | 55.00 PK | 74.00 | -19.00 | 1.81 H | 233 | 12.20 | 42.80 |
| 8 | 7386.000 | 40.90 AV | 54.00 | -13.10 | 1.81 H | 233 | -1.90 | 42.80 |
| 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 | *2462.000 | 111.66 PK | | | 1.18 V | 13 | 80.94 | 30.72 |
| 2 | *2462.000 | 101.53 AV | | | 1.18 V | 13 | 70.81 | 30.72 |
| 3 | 2483.500 | 69.39 PK | 74.00 | -4.61 | 1.18 V | 11 | 38.57 | 30.82 |
| 4 | 2483.500 | 52.78 AV | 54.00 | -1.22 | 1.18 V | 11 | 21.96 | 30.82 |
| 5 | 4924.000 | 49.77 PK | 74.00 | -24.23 | 1.01 V | 180 | 13.87 | 35.90 |
| 6 | 4924.000 | 36.15 AV | 54.00 | -17.85 | 1.01 V | 180 | 0.25 | 35.90 |
| 7 | 7386.000 | 53.57 PK | 74.00 | -20.43 | 1.27 V | 211 | 10.77 | 42.80 |
| 8 | 7386.000 | 39.53 AV | 54.00 | -14.47 | 1.27 V | 211 | -3.27 | 42.80 |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

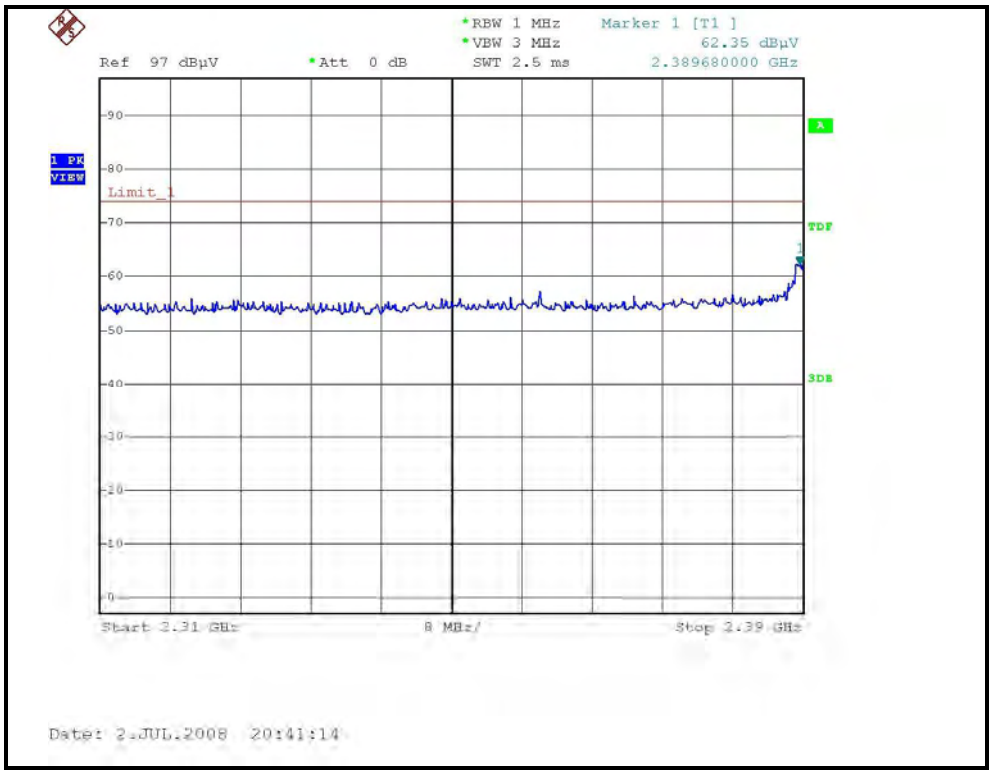
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

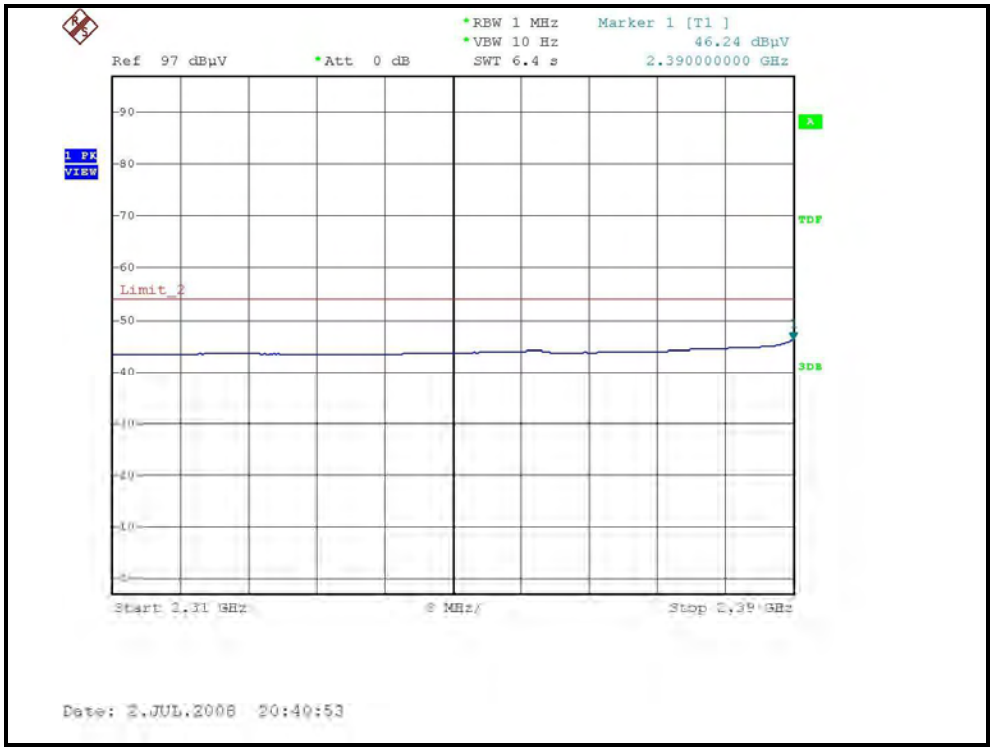
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

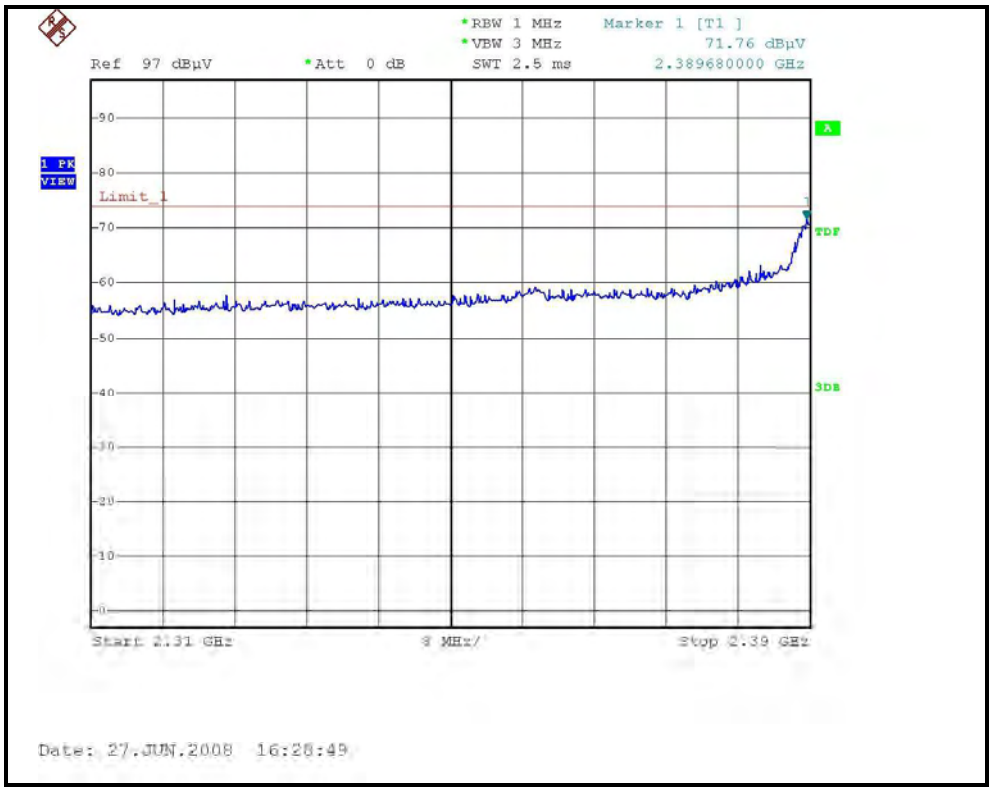
5. " * ": Fundamental frequency.

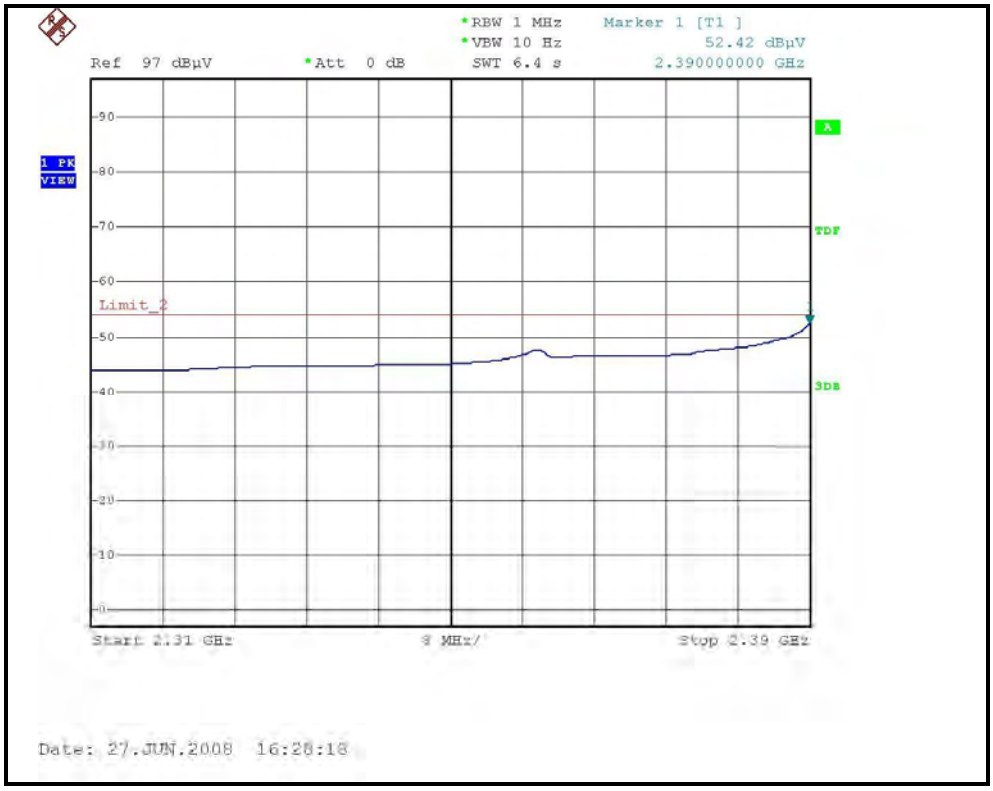
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL )



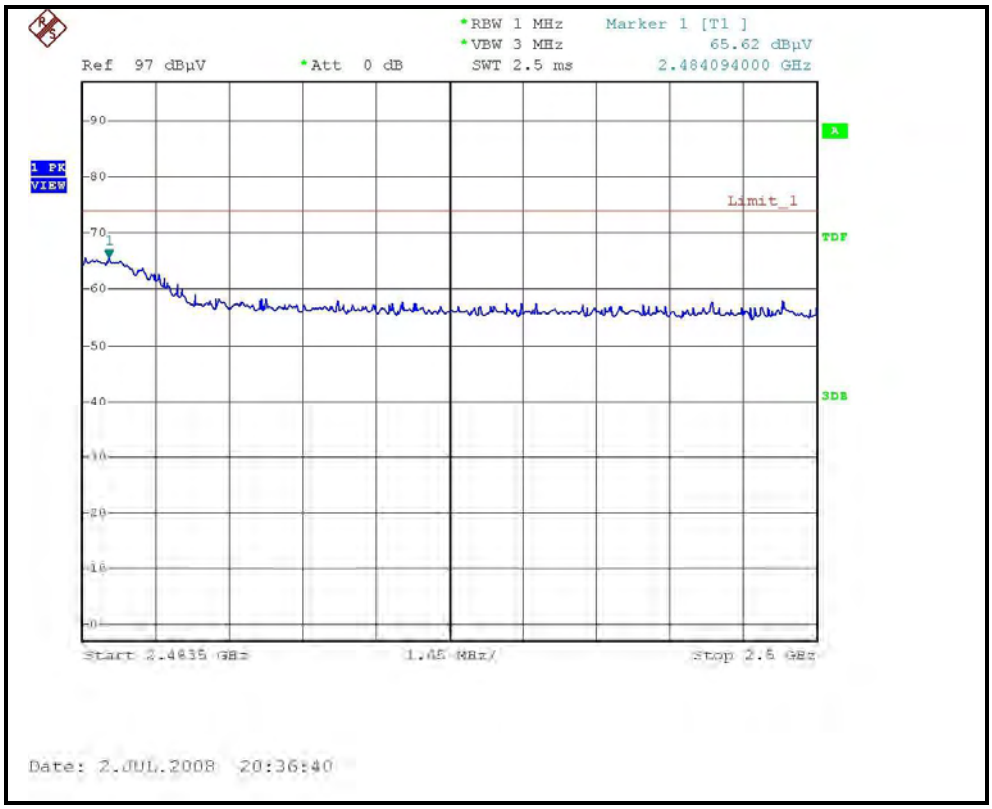



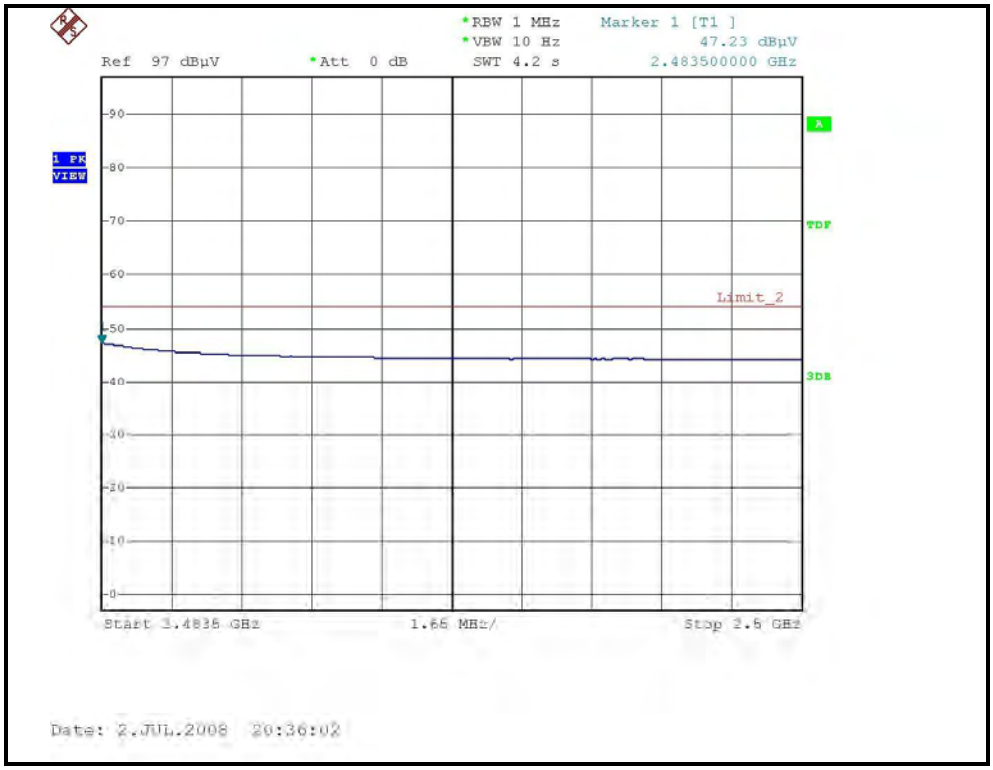
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL )



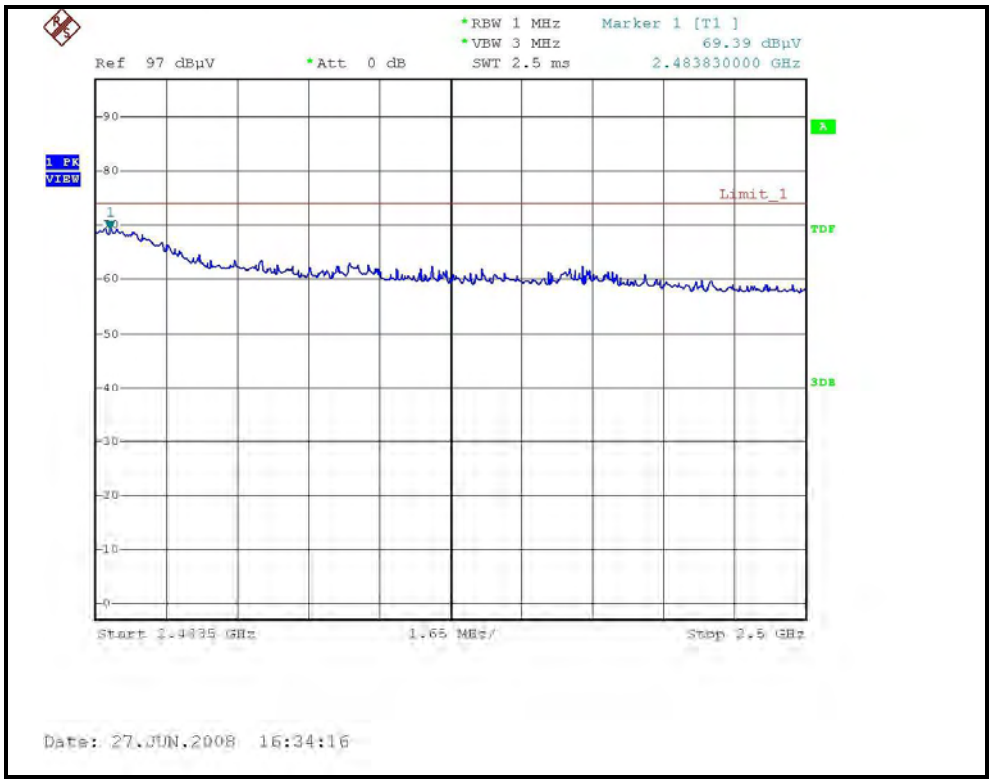



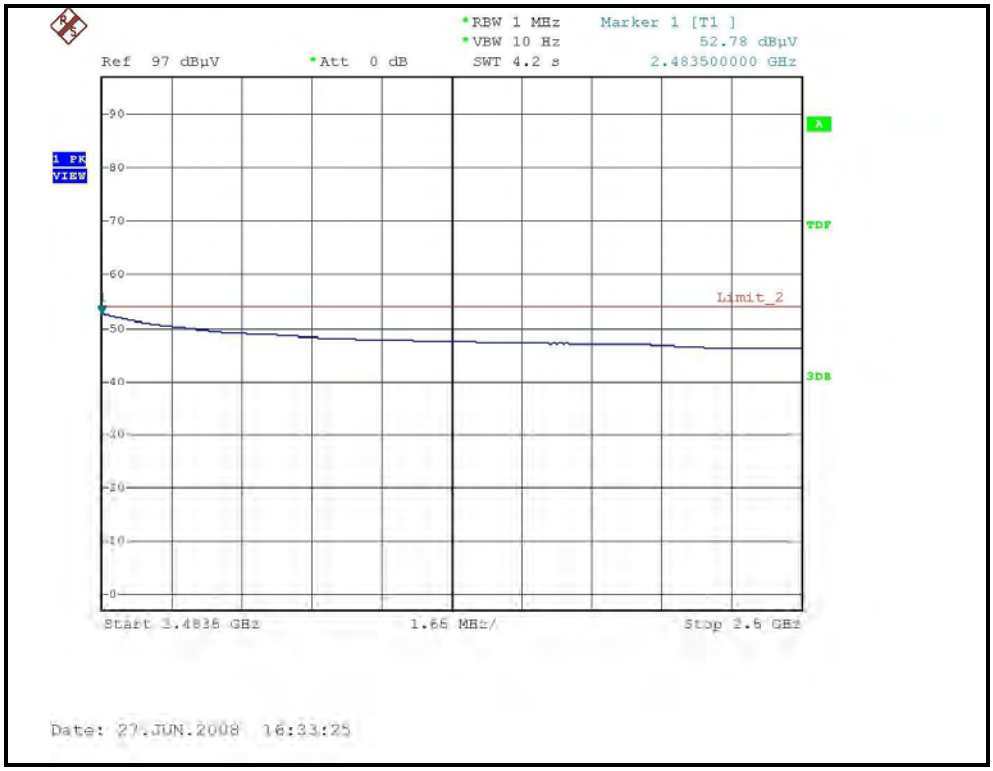
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL )



RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL )



## DRAFT 802.11n (20MHz) OFDM MODULATION

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 1 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | 2390.000 | 60.82 PK | 74.00 | -13.18 | 1.42 H | 96 | 30.42 | 30.40 |
| 2 | 2390.000 | 47.23 AV | 54.00 | -6.77 | 1.42 H | 96 | 16.83 | 30.40 |
| 3 | *2412.000 | 105.04 PK | | | 1.42 H | 97 | 74.55 | 30.49 |
| 4 | *2412.000 | 93.91 AV | | | 1.42 H | 97 | 63.42 | 30.49 |
| 5 | 4824.000 | 49.90 PK | 74.00 | -24.10 | 1.16 H | 117 | 14.21 | 35.69 |
| 6 | 4824.000 | 36.20 AV | 54.00 | -17.80 | 1.16 H | 117 | 0.51 | 35.69 |
| 7 | 7236.000 | 55.50 PK | 74.00 | -18.50 | 1.57 H | 236 | 13.26 | 42.24 |
| 8 | 7236.000 | 42.10 AV | 54.00 | -11.90 | 1.57 H | 236 | -0.14 | 42.24 |
| 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 | 2390.000 | 68.39 PK | 74.00 | -5.61 | 1.27 V | 352 | 37.99 | 30.40 |
| 2 | 2390.000 | 53.16 AV | 54.00 | -0.84 | 1.27 V | 352 | 22.76 | 30.40 |
| 3 | *2412.000 | 113.75 PK | | | 1.25 V | 351 | 83.26 | 30.49 |
| 4 | *2412.000 | 102.14 AV | | | 1.25 V | 351 | 71.65 | 30.49 |
| 5 | 4824.000 | 48.53 PK | 74.00 | -25.47 | 1.12 V | 225 | 12.84 | 35.69 |
| 6 | 4824.000 | 35.90 AV | 54.00 | -18.10 | 1.12 V | 225 | 0.21 | 35.69 |
| 7 | 7236.000 | 52.70 PK | 74.00 | -21.30 | 1.38 V | 18 | 10.46 | 42.24 |
| 8 | 7236.000 | 39.70 AV | 54.00 | -14.30 | 1.38 V | 18 | -2.54 | 42.24 |

**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. " * ": Fundamental frequency.

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 6 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | *2437.000 | 106.66 PK | | | 1.43 H | 219 | 76.05 | 30.61 |
| 2 | *2437.000 | 94.40 AV | | | 1.43 H | 219 | 63.79 | 30.61 |
| 3 | 4874.000 | 47.70 PK | 74.00 | -26.30 | 1.31 H | 313 | 11.90 | 35.80 |
| 4 | 4874.000 | 35.20 AV | 54.00 | -18.80 | 1.31 H | 313 | -0.60 | 35.80 |
| 5 | 7311.000 | 55.40 PK | 74.00 | -18.60 | 1.80 H | 227 | 12.88 | 42.52 |
| 6 | 7311.000 | 41.99 AV | 54.00 | -12.01 | 1.80 H | 227 | -0.53 | 42.52 |
| 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 | *2437.000 | 114.26 PK | | | 1.13 V | 15 | 83.65 | 30.61 |
| 2 | *2437.000 | 102.10 AV | | | 1.13 V | 15 | 71.49 | 30.61 |
| 3 | 4874.000 | 49.60 PK | 74.00 | -24.40 | 1.03 V | 171 | 13.80 | 35.80 |
| 4 | 4874.000 | 36.62 AV | 54.00 | -17.38 | 1.03 V | 171 | 0.82 | 35.80 |
| 5 | 7311.000 | 53.50 PK | 74.00 | -20.50 | 1.44 V | 207 | 10.98 | 42.52 |
| 6 | 7311.000 | 40.30 AV | 54.00 | -13.70 | 1.44 V | 207 | -2.22 | 42.52 |

**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. " * ": Fundamental frequency.

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 11 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | *2462.000 | 105.25 PK | | | 1.35 H | 107 | 74.53 | 30.72 |
| 2 | *2462.000 | 93.53 AV | | | 1.35 H | 107 | 62.81 | 30.72 |
| 3 | 2483.500 | 58.41 PK | 74.00 | -15.59 | 1.36 H | 117 | 27.59 | 30.82 |
| 4 | 2483.500 | 45.79 AV | 54.00 | -8.21 | 1.36 H | 117 | 14.97 | 30.82 |
| 5 | 4924.000 | 48.10 PK | 74.00 | -25.90 | 1.33 H | 320 | 12.20 | 35.90 |
| 6 | 4924.000 | 35.50 AV | 54.00 | -18.50 | 1.33 H | 320 | -0.40 | 35.90 |
| 7 | 7386.000 | 55.60 PK | 74.00 | -18.40 | 1.78 H | 231 | 12.80 | 42.80 |
| 8 | 7386.000 | 42.10 AV | 54.00 | -11.90 | 1.78 H | 231 | -0.70 | 42.80 |
| 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 | *2462.000 | 112.96 PK | | | 1.51 V | 15 | 82.24 | 30.72 |
| 2 | *2462.000 | 101.34 AV | | | 1.51 V | 15 | 70.62 | 30.72 |
| 3 | 2483.500 | 69.62 PK | 74.00 | -4.38 | 1.20 V | 15 | 38.80 | 30.82 |
| 4 | 2483.500 | 53.20 AV | 54.00 | -0.80 | 1.20 V | 15 | 22.38 | 30.82 |
| 5 | 4924.000 | 49.50 PK | 74.00 | -24.50 | 1.12 V | 173 | 13.60 | 35.90 |
| 6 | 4924.000 | 36.70 AV | 54.00 | -17.30 | 1.12 V | 173 | 0.80 | 35.90 |
| 7 | 7386.000 | 53.54 PK | 74.00 | -20.46 | 1.40 V | 213 | 10.74 | 42.80 |
| 8 | 7386.000 | 40.14 AV | 54.00 | -13.86 | 1.40 V | 213 | -2.66 | 42.80 |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

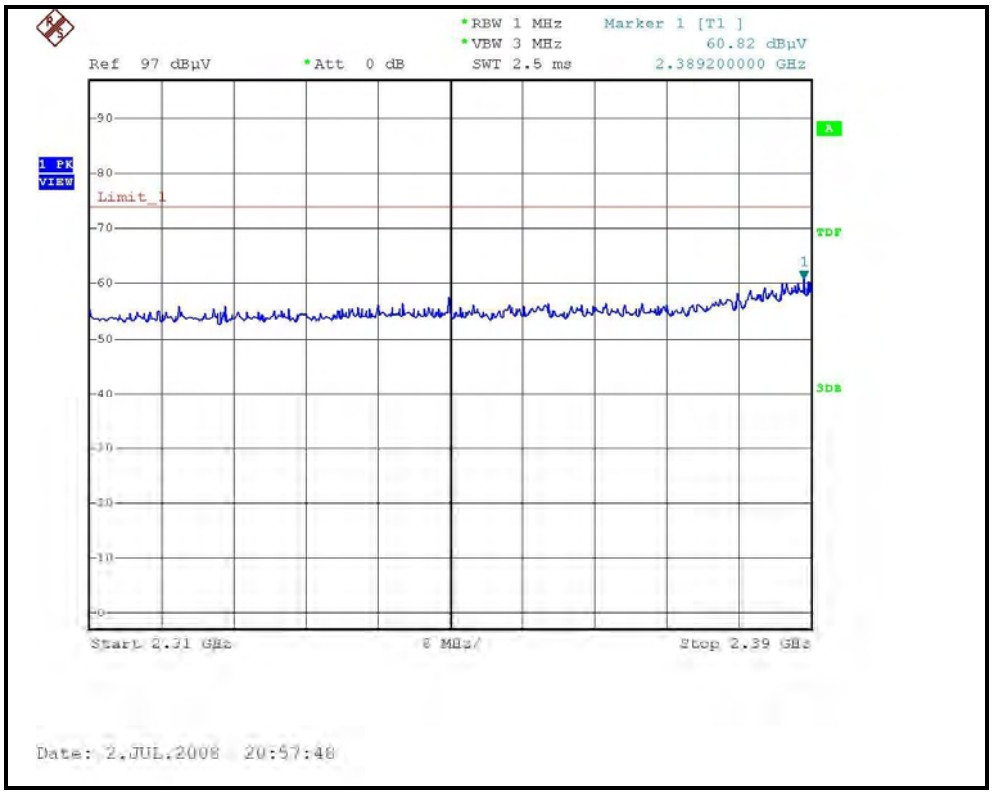
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

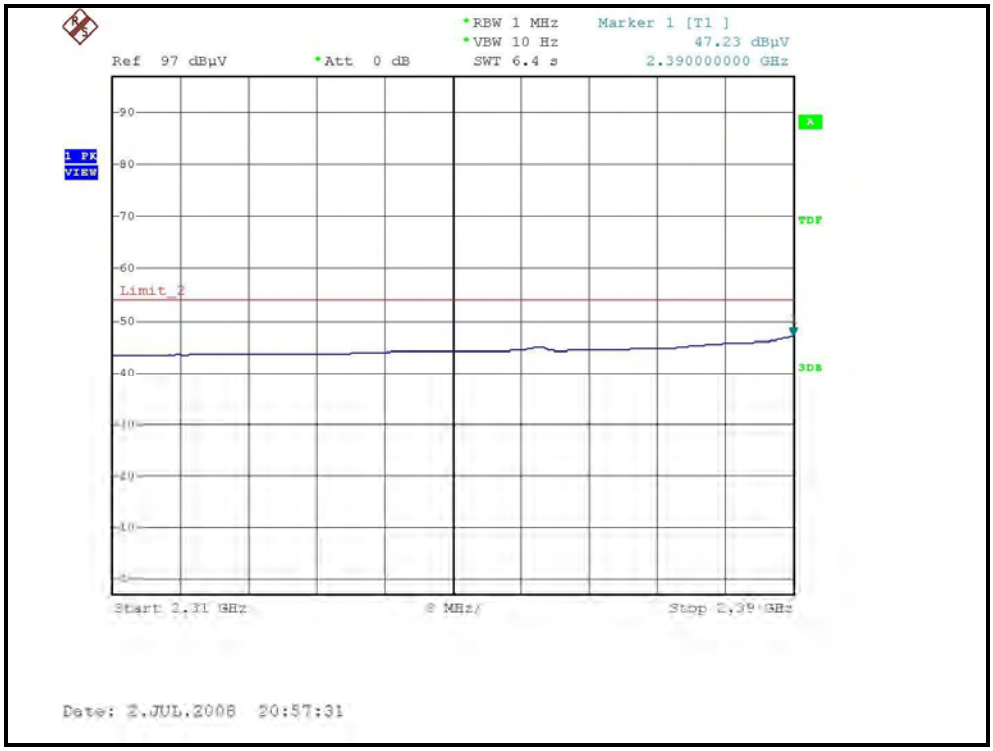
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

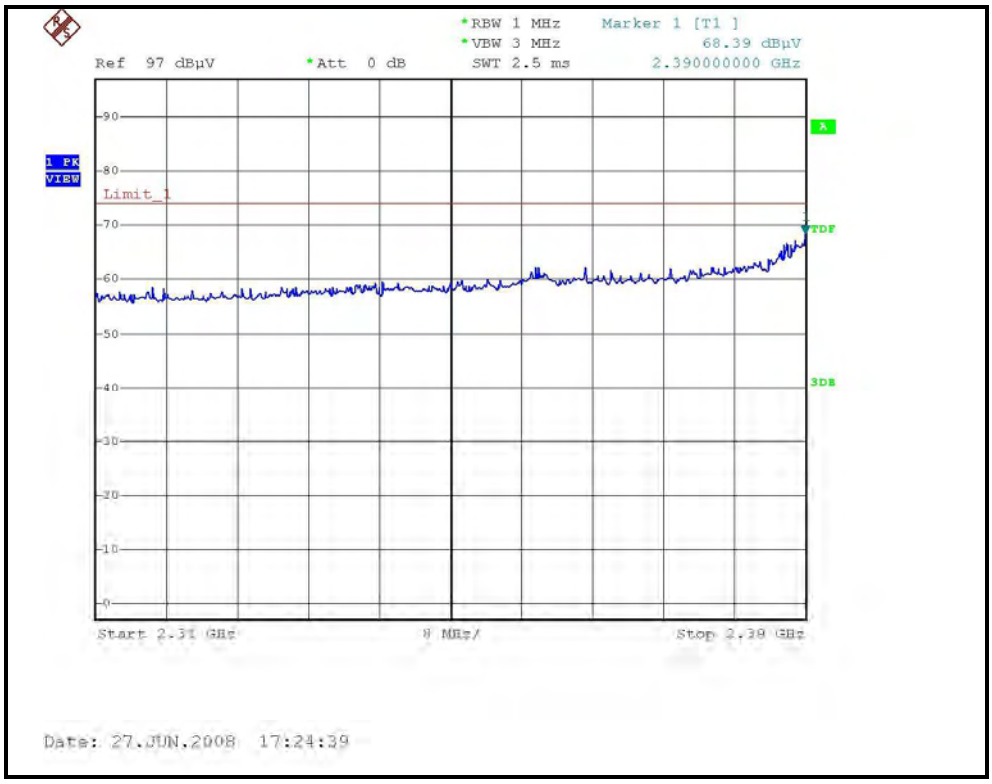
5. " * ": Fundamental frequency.

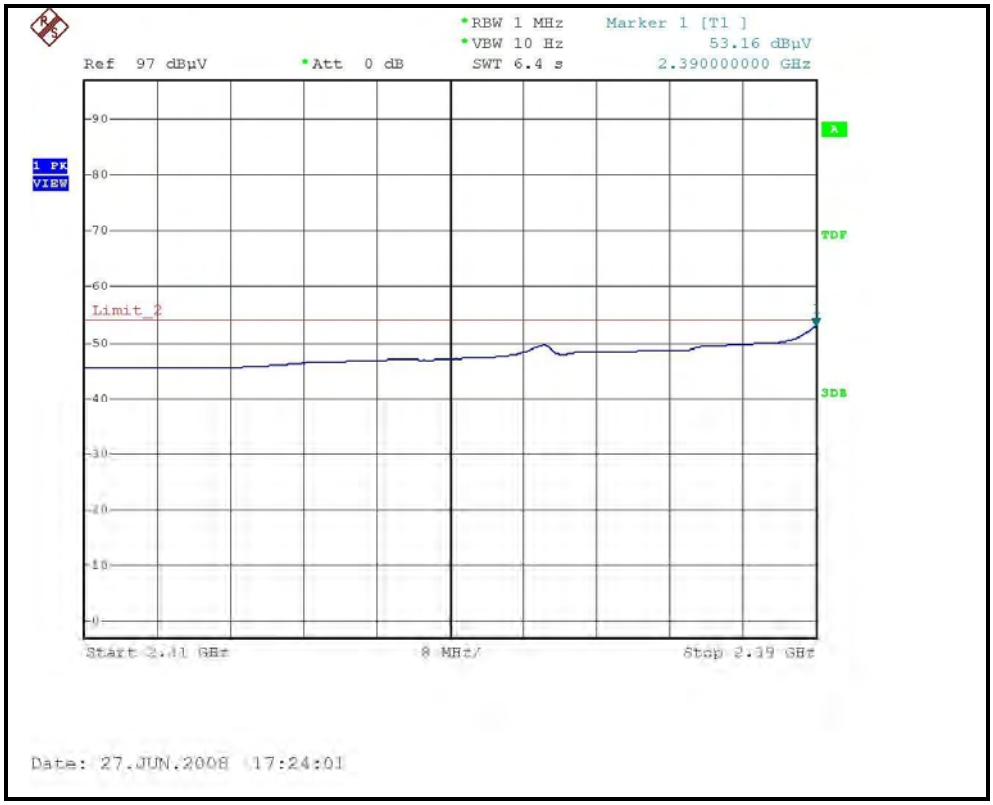
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, HORIZONTAL )



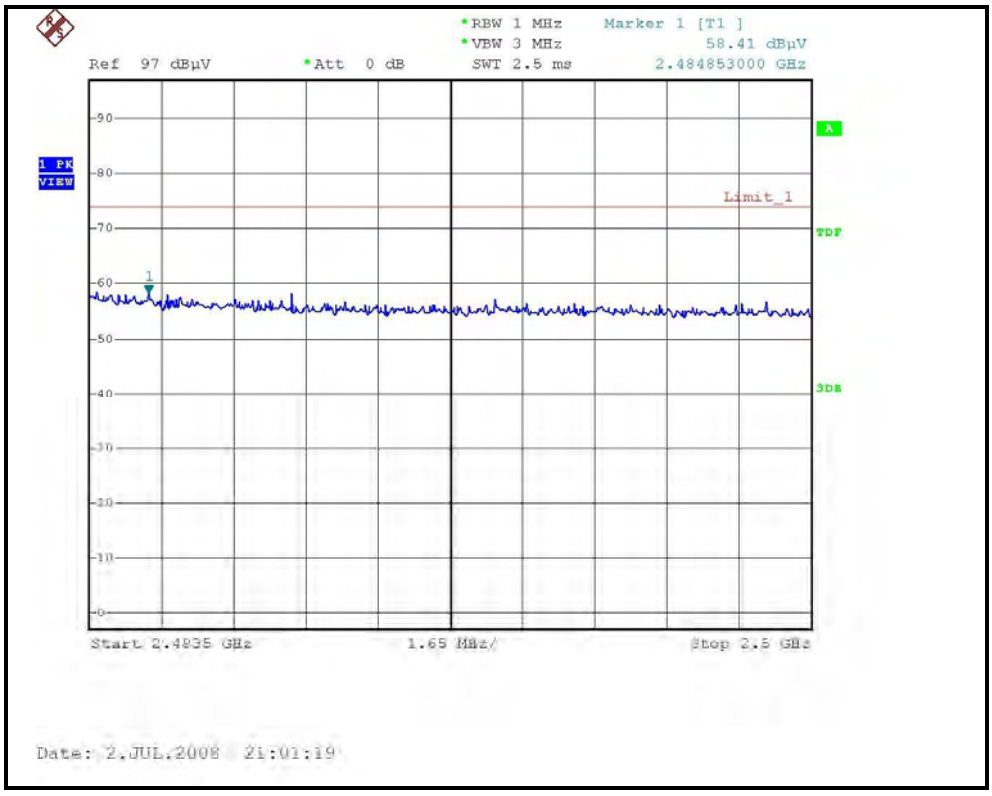



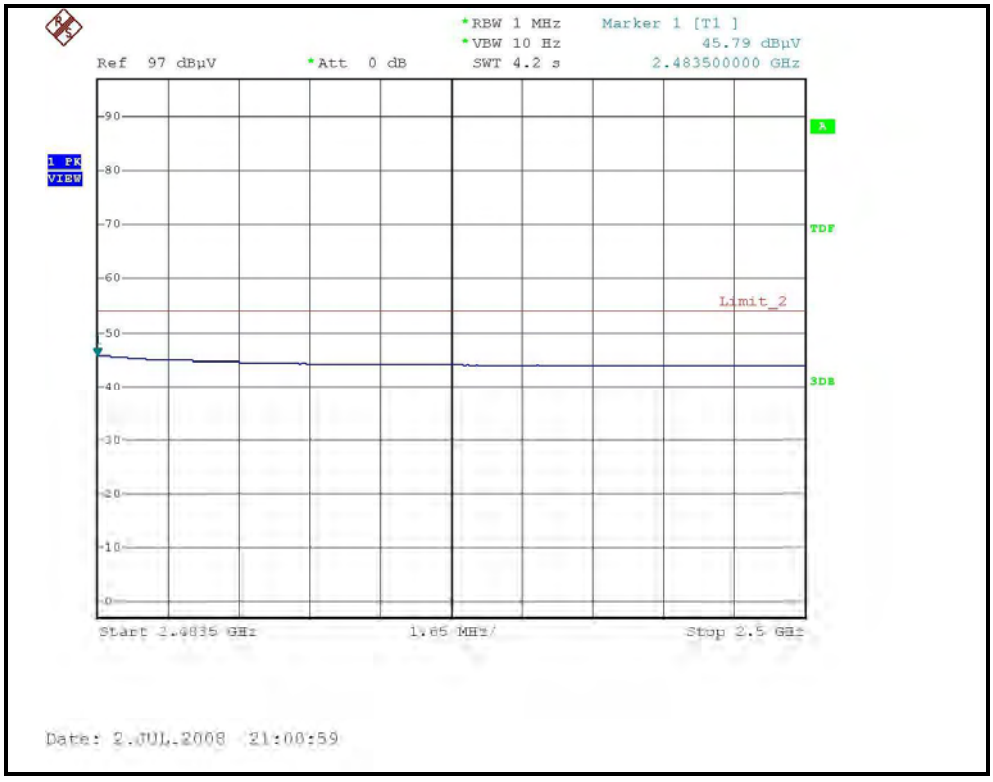
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, VERTICAL )



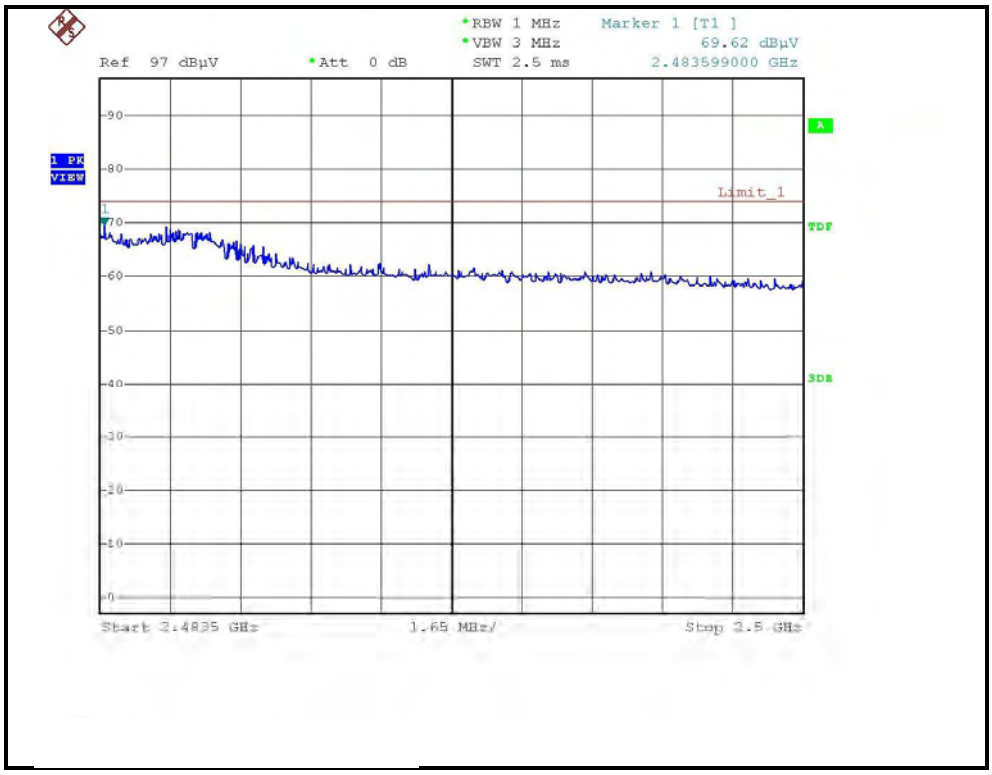



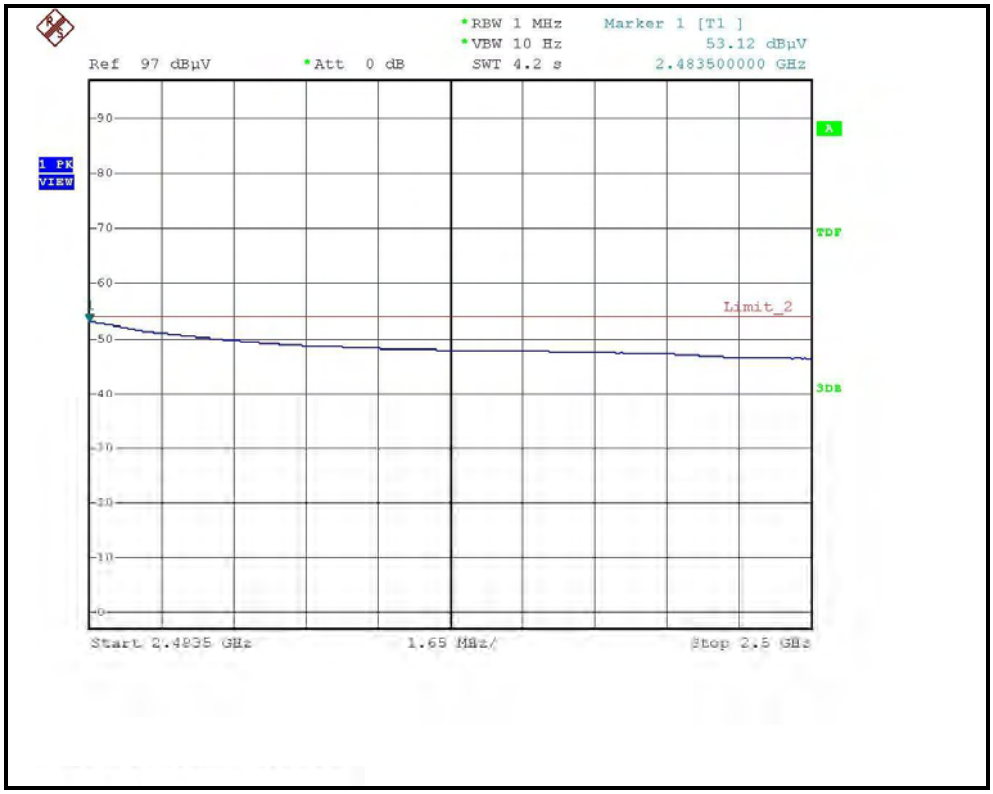
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH11, HORIZONTAL )



RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH11, VERTICAL )



## DRAFT 802.11n (40MHz) OFDM MODULATION

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 1 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH 965hPa | TESTED BY | Phoenix Huang |

| 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 | 2390.000 | 61.79 PK | 74.00 | -12.21 | 1.11 H | 359 | 31.39 | 30.40 |
| 2 | 2390.000 | 48.66 AV | 54.00 | -5.34 | 1.11 H | 359 | 18.26 | 30.40 |
| 3 | *2422.000 | 101.82 PK | | | 1.08 H | 318 | 71.28 | 30.54 |
| 4 | *2422.000 | 90.78 AV | | | 1.08 H | 318 | 60.24 | 30.54 |
| 5 | 4844.000 | 47.30 PK | 74.00 | -26.70 | 1.30 H | 215 | 11.56 | 35.74 |
| 6 | 4844.000 | 34.60 AV | 54.00 | -19.40 | 1.30 H | 215 | -1.14 | 35.74 |
| 7 | 7266.000 | 52.10 PK | 74.00 | -21.90 | 1.79 H | 228 | 9.75 | 42.35 |
| 8 | 7266.000 | 39.20 AV | 54.00 | -14.80 | 1.79 H | 228 | -3.15 | 42.35 |
| 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 | 2390.000 | 67.45 PK | 74.00 | -6.55 | 1.20 V | 15 | 37.05 | 30.40 |
| **2** | **2390.000** | **53.24 AV** | **54.00** | **-0.76** | **1.20 V** | **15** | **22.84** | **30.40** |
| 3 | *2422.000 | 112.96 PK | | | 1.51 V | 15 | 82.42 | 30.54 |
| 4 | *2422.000 | 101.34 AV | | | 1.51 V | 15 | 70.80 | 30.54 |
| 5 | 4844.000 | 46.60 PK | 74.00 | -27.40 | 1.13 V | 173 | 10.86 | 35.74 |
| 6 | 4844.000 | 33.26 AV | 54.00 | -20.74 | 1.13 V | 173 | -2.48 | 35.74 |
| 7 | 7266.000 | 51.44 PK | 74.00 | -22.56 | 1.28 V | 212 | 9.09 | 42.35 |
| 8 | 7266.000 | 38.20 AV | 54.00 | -15.80 | 1.28 V | 212 | -4.15 | 42.35 |

**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. " * ": Fundamental frequency.

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 4 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | 2390.000 | 59.93 PK | 74.00 | -14.07 | 1.08 H | 316 | 29.53 | 30.40 |
| 2 | 2390.000 | 45.97 AV | 54.00 | -8.03 | 1.08 H | 316 | 15.57 | 30.40 |
| 3 | *2437.000 | 103.85 PK | | | 1.08 H | 318 | 73.24 | 30.61 |
| 4 | *2437.000 | 93.14 AV | | | 1.08 H | 318 | 62.53 | 30.61 |
| 5 | 2483.500 | 63.89 PK | 74.00 | -10.11 | 1.30 H | 319 | 33.07 | 30.82 |
| 6 | 2483.500 | 48.12 AV | 54.00 | -5.88 | 1.30 H | 319 | 17.30 | 30.82 |
| 7 | 4874.000 | 47.08 PK | 74.00 | -26.92 | 1.31 H | 308 | 11.28 | 35.80 |
| 8 | 4874.000 | 34.51 AV | 54.00 | -19.49 | 1.31 H | 308 | -1.29 | 35.80 |
| 9 | 7311.000 | 54.90 PK | 74.00 | -19.10 | 1.82 H | 234 | 12.38 | 42.52 |
| 10 | 7311.000 | 41.60 AV | 54.00 | -12.40 | 1.82 H | 234 | -0.92 | 42.52 |
| 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 | 2390.000 | 69.75 PK | 74.00 | -4.25 | 1.15 V | 351 | 39.35 | 30.40 |
| 2 | 2390.000 | 52.83 AV | 54.00 | -1.17 | 1.15 V | 351 | 22.43 | 30.40 |
| 3 | *2437.000 | 111.86 PK | | | 1.15 V | 359 | 81.25 | 30.61 |
| 4 | *2437.000 | 100.62 AV | | | 1.15 V | 359 | 70.01 | 30.61 |
| 5 | 2483.500 | 68.28 PK | 74.00 | -5.72 | 1.12 V | 343 | 37.46 | 30.82 |
| 6 | 2483.500 | 53.10 AV | 54.00 | -0.90 | 1.12 V | 343 | 22.28 | 30.82 |
| 7 | 4874.000 | 48.00 PK | 74.00 | -26.00 | 1.25 V | 219 | 12.20 | 35.80 |
| 8 | 4874.000 | 35.02 AV | 54.00 | -18.98 | 1.25 V | 219 | -0.78 | 35.80 |
| 9 | 7311.000 | 53.38 PK | 74.00 | -20.62 | 1.19 V | 210 | 10.86 | 42.52 |
| 10 | 7311.000 | 39.95 AV | 54.00 | -14.05 | 1.19 V | 210 | -2.57 | 42.52 |

**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. " * ": Fundamental frequency.

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 7 | FREQUENCY RANGE | 1 ~ 25GHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 70%RH<br>965hPa | TESTED BY | Phoenix Huang |

| 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 | *2452.000 | 101.03 PK | | | 1.07 H | 0 | 70.36 | 30.67 |
| 2 | *2452.000 | 89.22 AV | | | 1.07 H | 0 | 58.55 | 30.67 |
| 3 | 2484.000 | 59.03 PK | 74.00 | -14.97 | 1.06 H | 8 | 28.23 | 30.80 |
| 4 | 2484.000 | 45.64 AV | 54.00 | -8.36 | 1.06 H | 8 | 14.84 | 30.80 |
| 5 | 4904.000 | 47.15 PK | 74.00 | -26.85 | 1.34 H | 300 | 11.29 | 35.86 |
| 6 | 4904.000 | 33.62 AV | 54.00 | -20.38 | 1.34 H | 300 | -2.24 | 35.86 |
| 7 | 7356.000 | 54.83 PK | 74.00 | -19.17 | 1.80 H | 237 | 12.15 | 42.68 |
| 8 | 7356.000 | 41.40 AV | 54.00 | -12.60 | 1.80 H | 237 | -1.28 | 42.68 |
| 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 | *2452.000 | 107.44 PK | | | 1.21 V | 0 | 76.77 | 30.67 |
| 2 | *2452.000 | 96.48 AV | | | 1.21 V | 0 | 65.81 | 30.67 |
| 3 | 2484.000 | 66.53 PK | 74.00 | -7.47 | 1.21 V | 344 | 35.71 | 30.82 |
| 4 | 2484.000 | 52.80 AV | 54.00 | -1.20 | 1.21 V | 344 | 21.98 | 30.82 |
| 5 | 4904.000 | 48.10 PK | 74.00 | -25.90 | 1.27 V | 208 | 12.24 | 35.86 |
| 6 | 4904.000 | 35.00 AV | 54.00 | -19.00 | 1.27 V | 208 | -0.86 | 35.86 |
| 7 | 7356.000 | 53.30 PK | 74.00 | -20.70 | 1.23 V | 225 | 10.62 | 42.68 |
| 8 | 7356.000 | 39.84 AV | 54.00 | -14.16 | 1.23 V | 225 | -2.84 | 42.68 |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

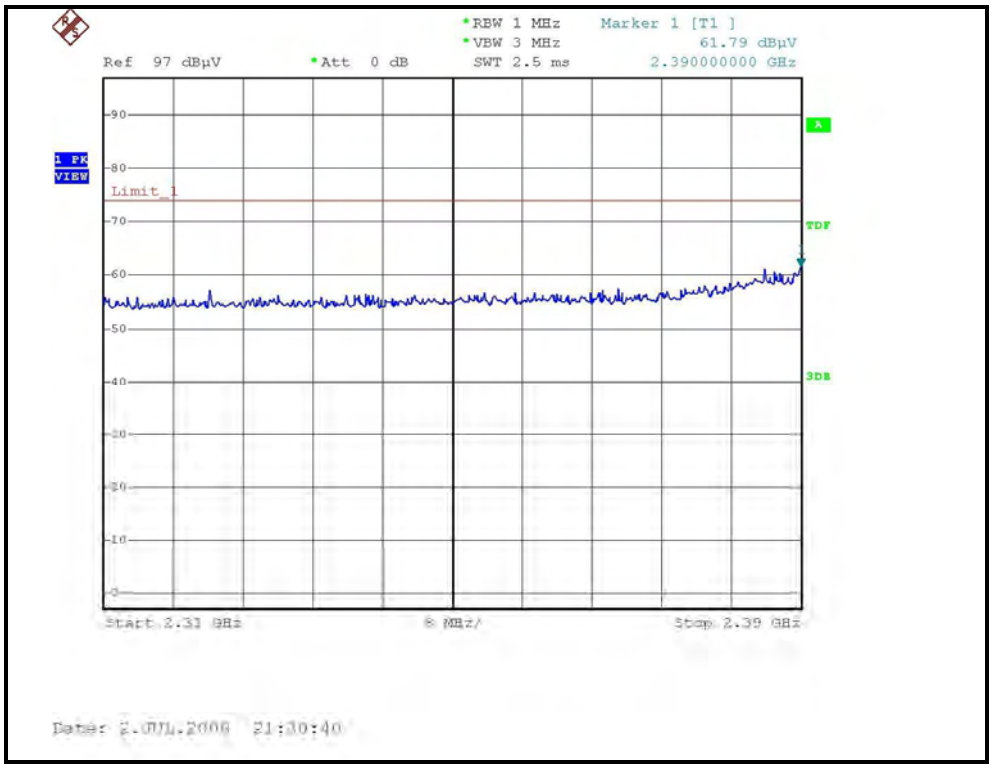
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

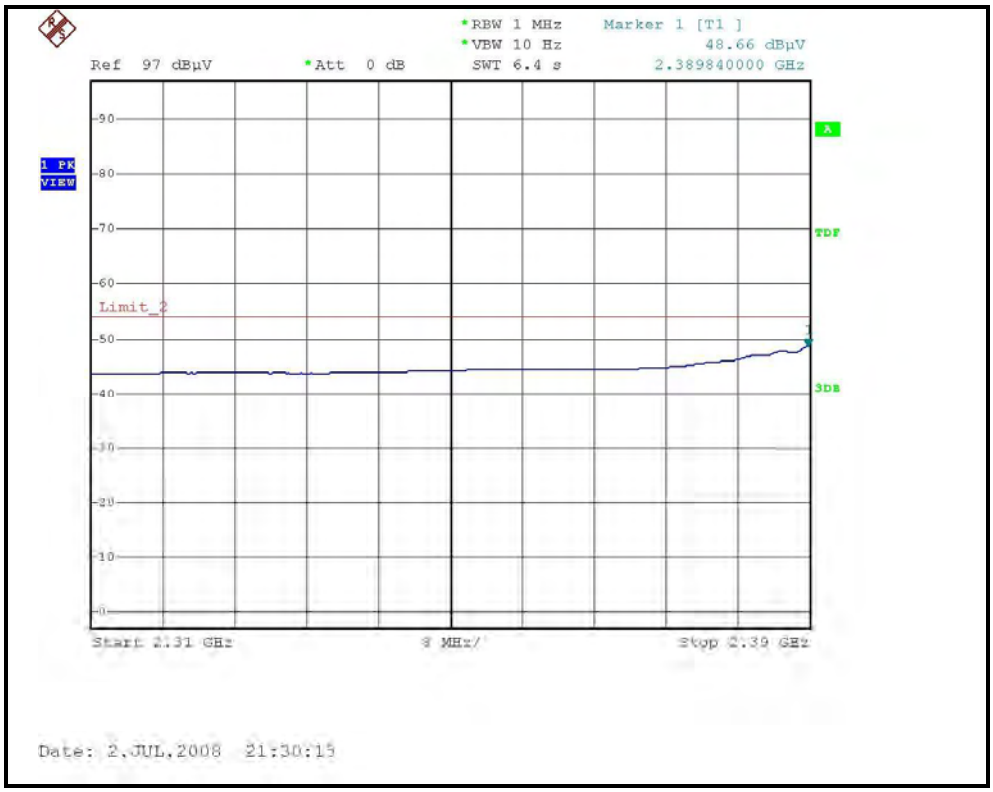
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

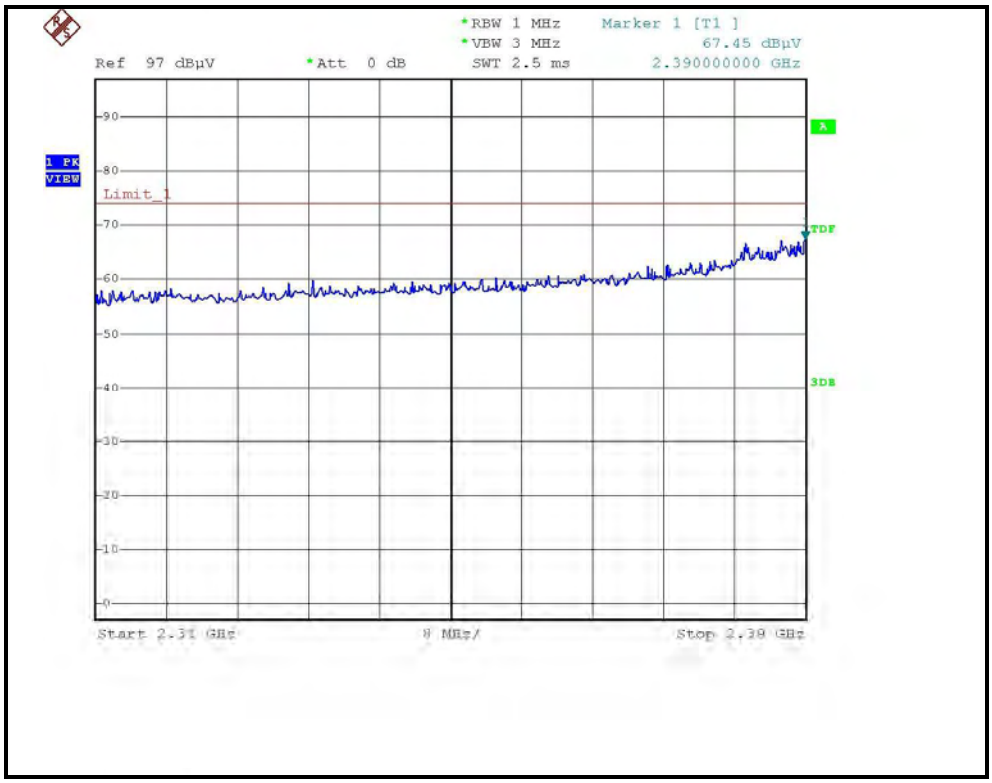
5. " * ": Fundamental frequency.

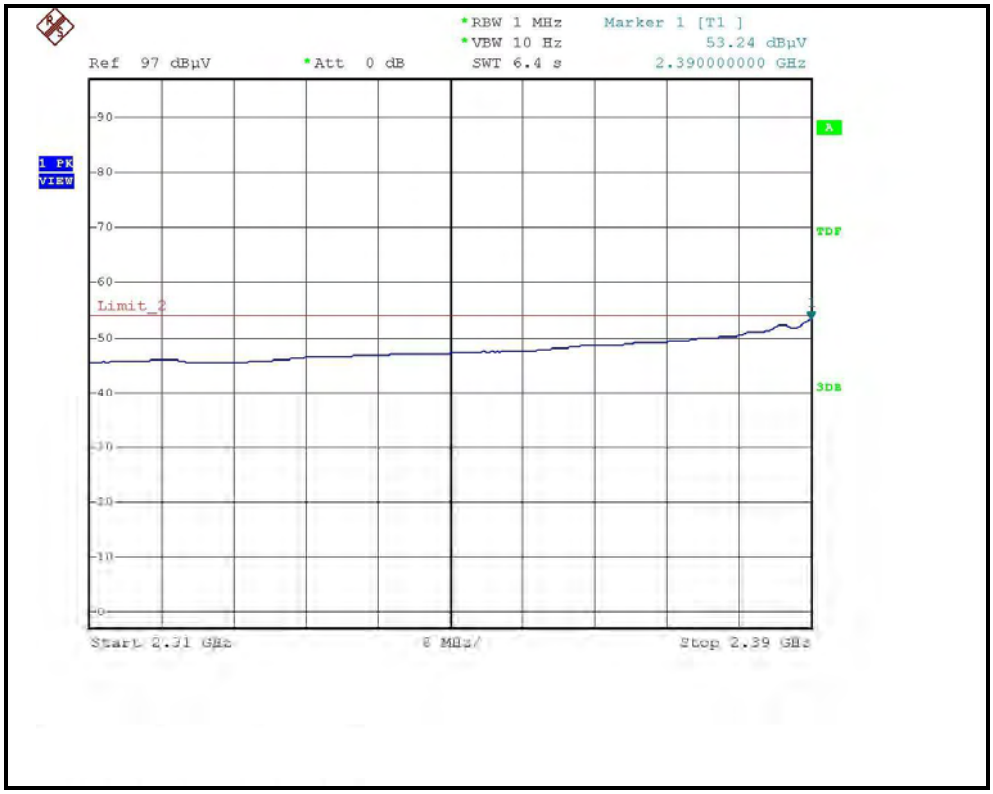
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, HORIZONTAL )



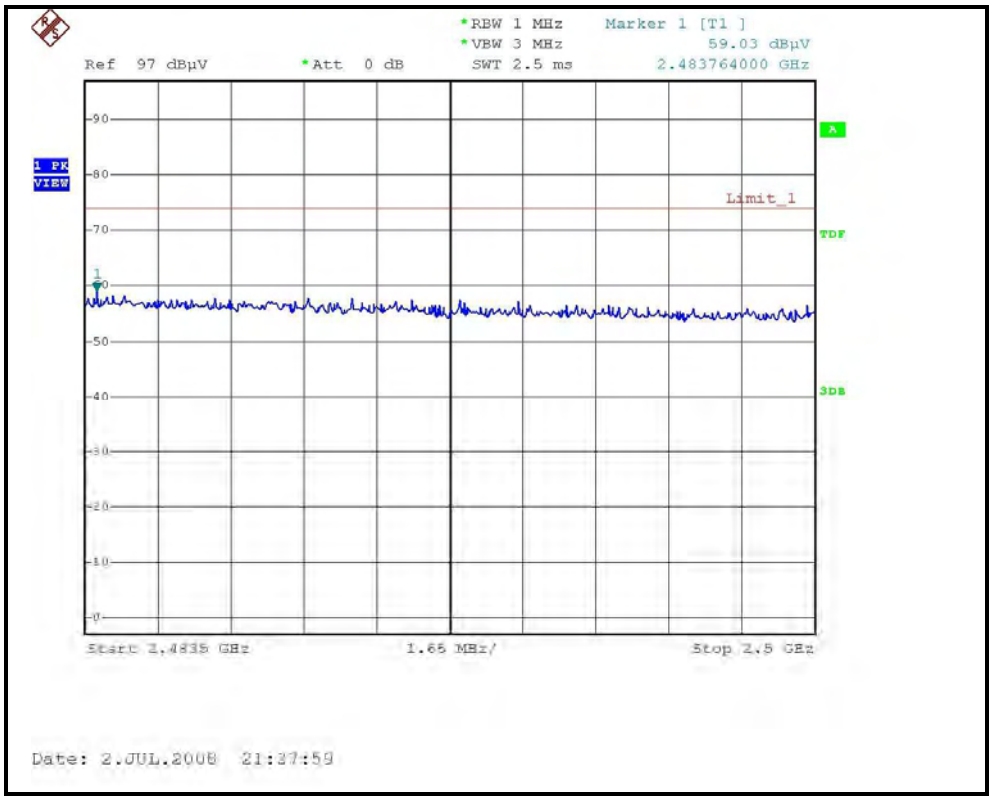



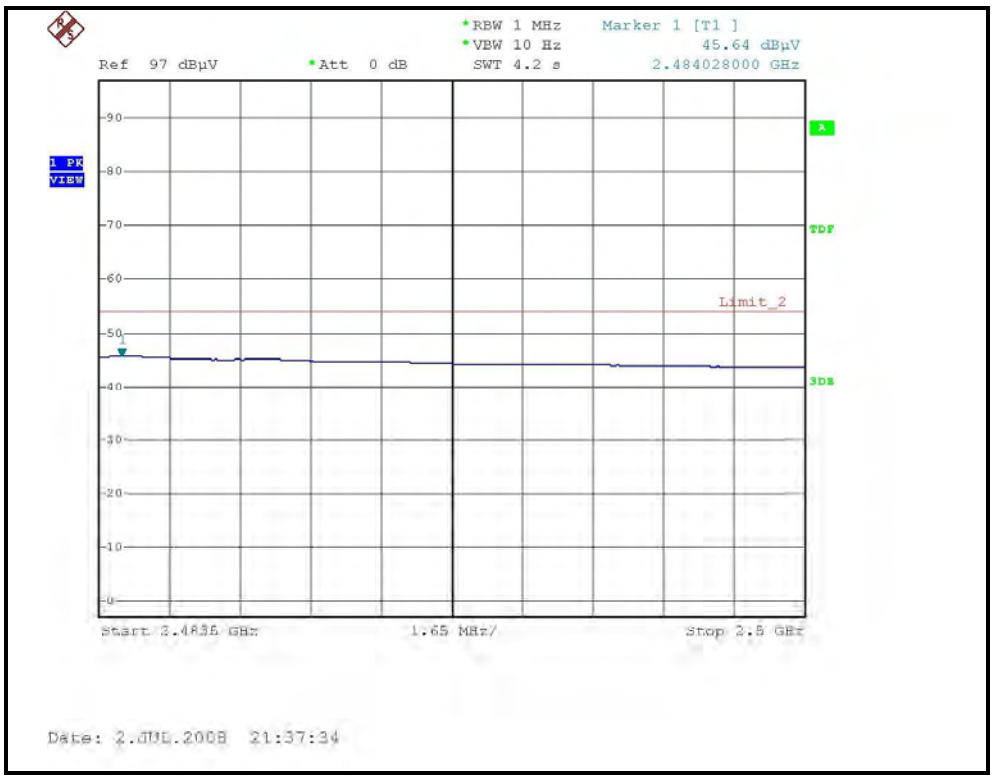
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, VERTICAL )



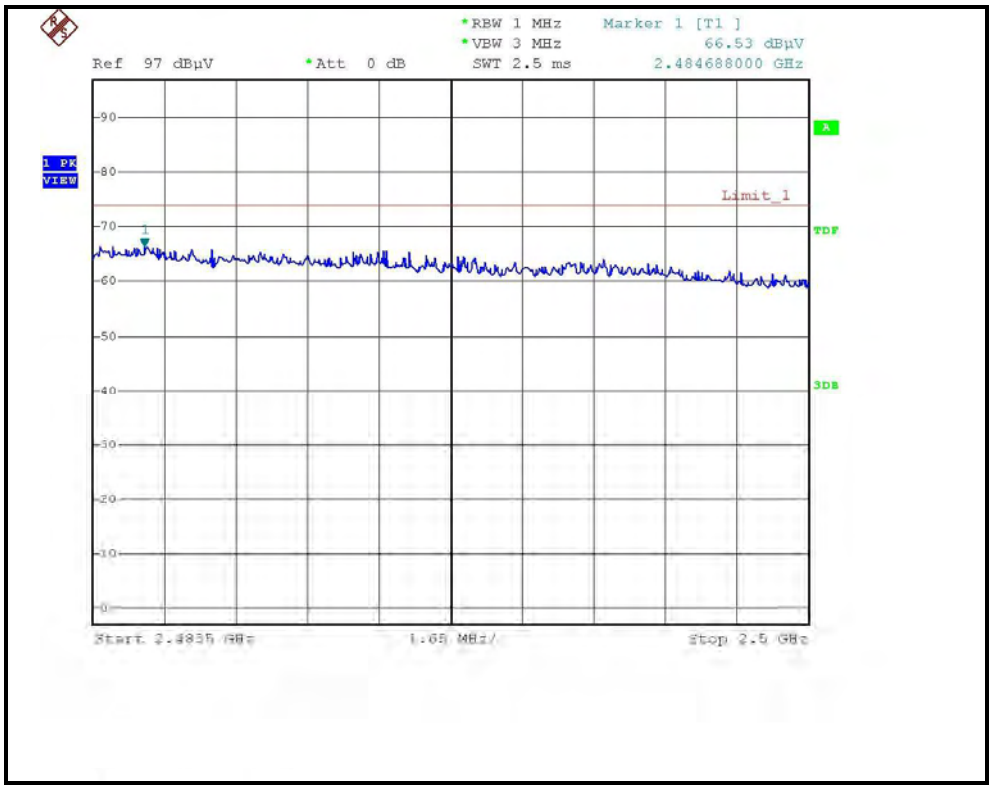



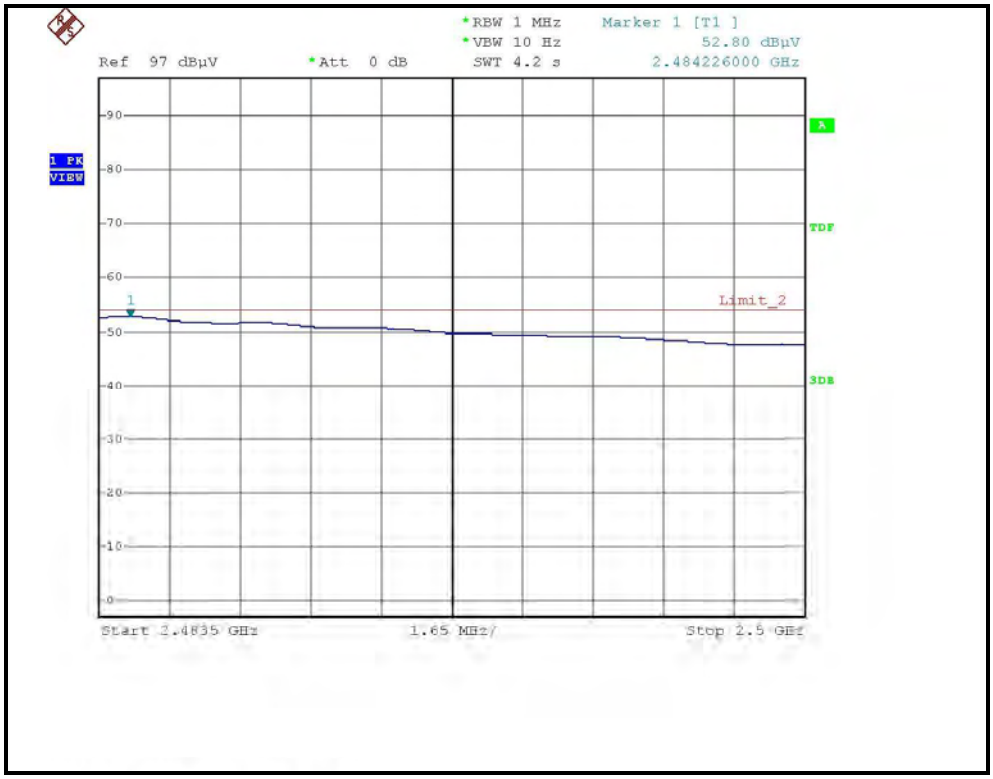
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, HORIZONTAL )



RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, 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 | Dec. 17, 2008 |

**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 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.3.5 TEST SETUP


### 4.3.6 EUT OPERATING CONDITIONS

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

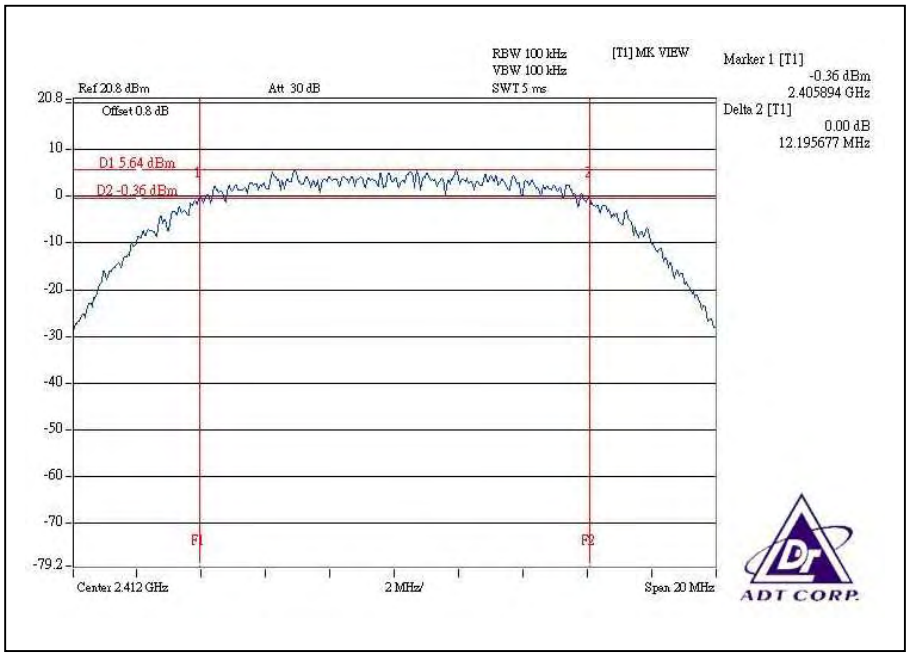
## 4.3.7 TEST RESULTS

### 802.11b DSSS MODULATION:

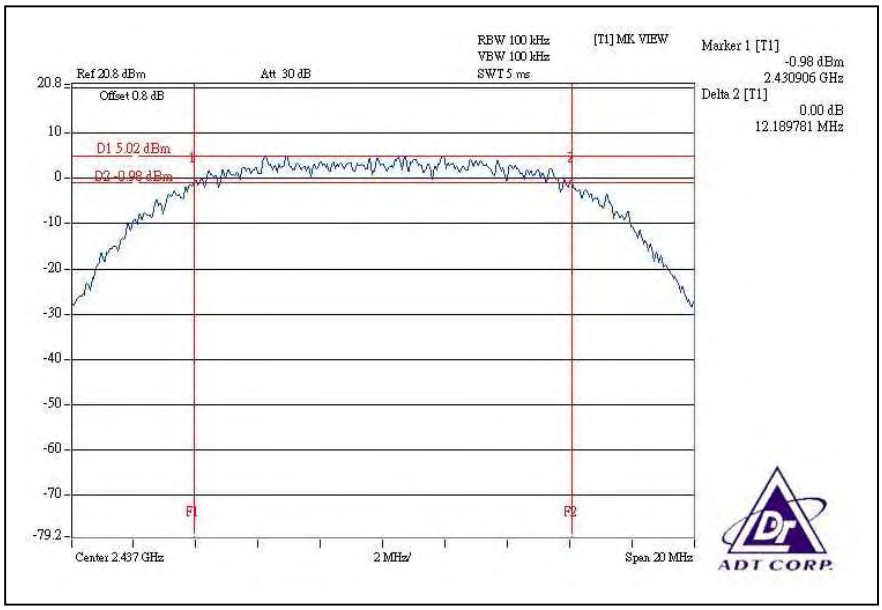
| MODULATION TYPE | CCK | TRANSFER RATE | 11Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---|---|---|---|---|
| 1 | 2412 | 12.20 | 0.5 | PASS |
| 6 | 2437 | 12.19 | 0.5 | PASS |
| 11 | 2462 | 12.17 | 0.5 | PASS |

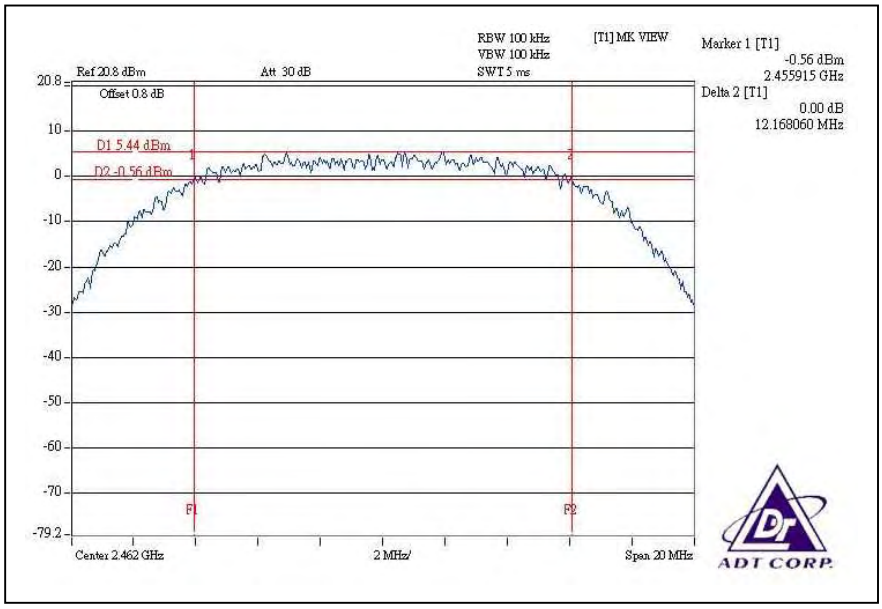
CH1



CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-0.98 dBm
2.430906 GHz
Delta 2 [T1]
0.00 dB
12.189781 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1 5.02 dBm
D2 -0.98 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH11

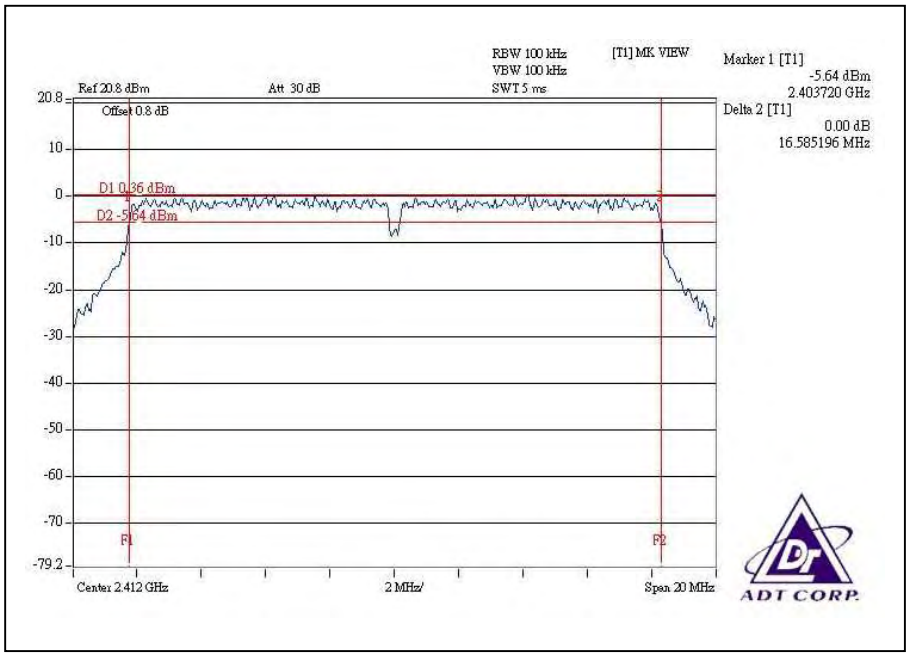

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-0.56 dBm
2.455915 GHz
Delta 2 [T1]
0.00 dB
12.168060 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1 5.44 dBm
D2 -0.56 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

## 802.11g OFDM MODULATION:

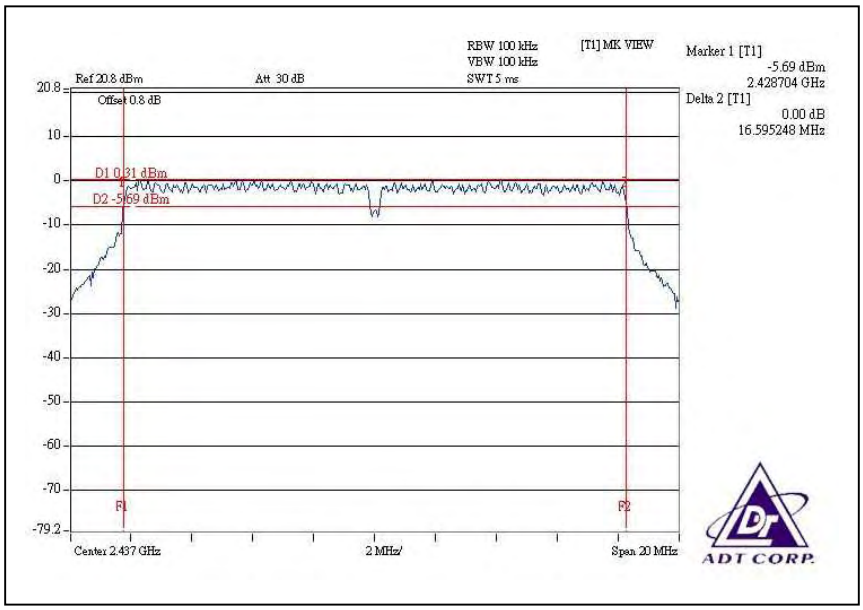
| MODULATION TYPE | BPSK | TRANSFER RATE | 6Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---|---|---|---|---|
| 1 | 2412 | 16.59 | 0.5 | PASS |
| 6 | 2437 | 16.60 | 0.5 | PASS |
| 11 | 2462 | 16.62 | 0.5 | PASS |

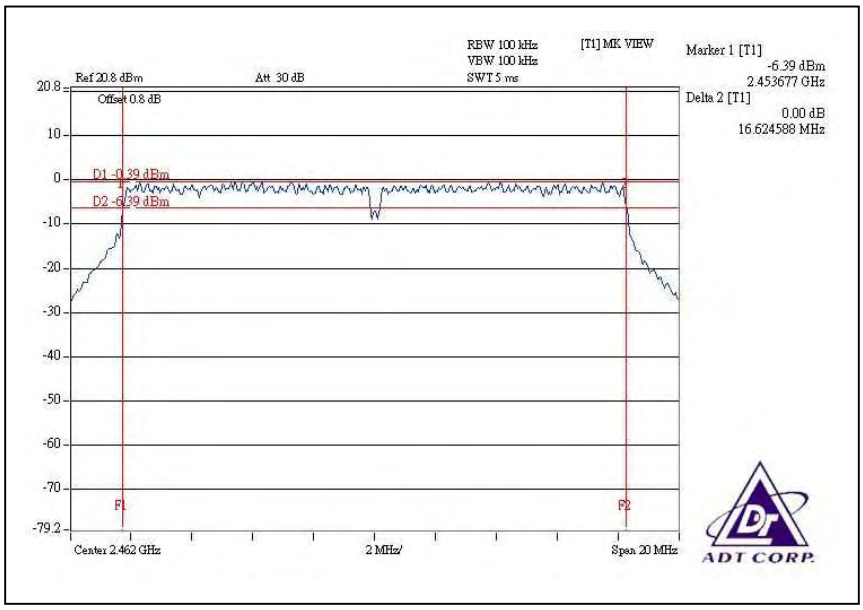
CH1



CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-5.69 dBm
2.428704 GHz
Delta 2 [T1]
0.00 dB
16.595248 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1 0.31 dBm
D2 -5.69 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH11

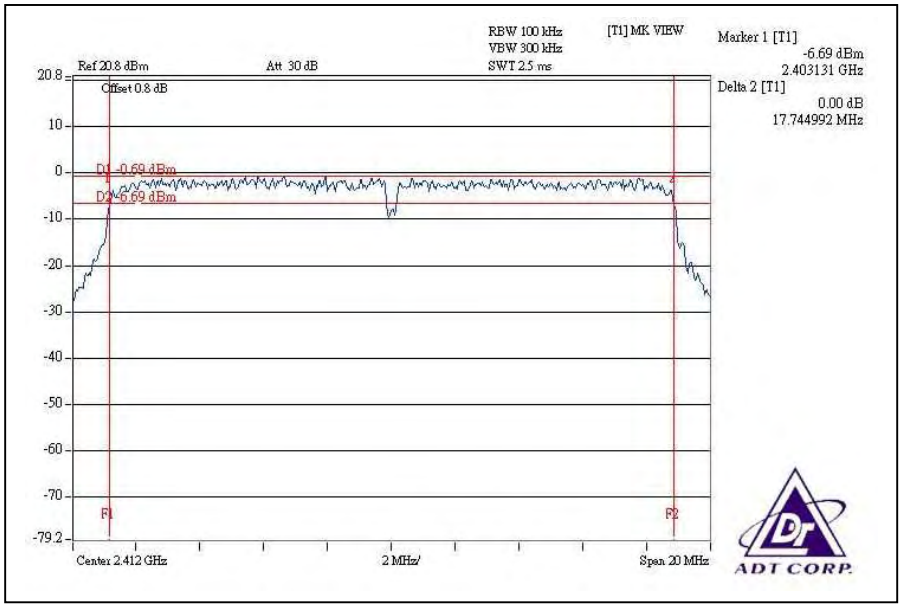

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-6.39 dBm
2.453677 GHz
Delta 2 [T1]
0.00 dB
16.624588 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1 -0.39 dBm
D2 -6.39 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

## DRAFT 802.11n (20MHz) OFDM MODULATION:

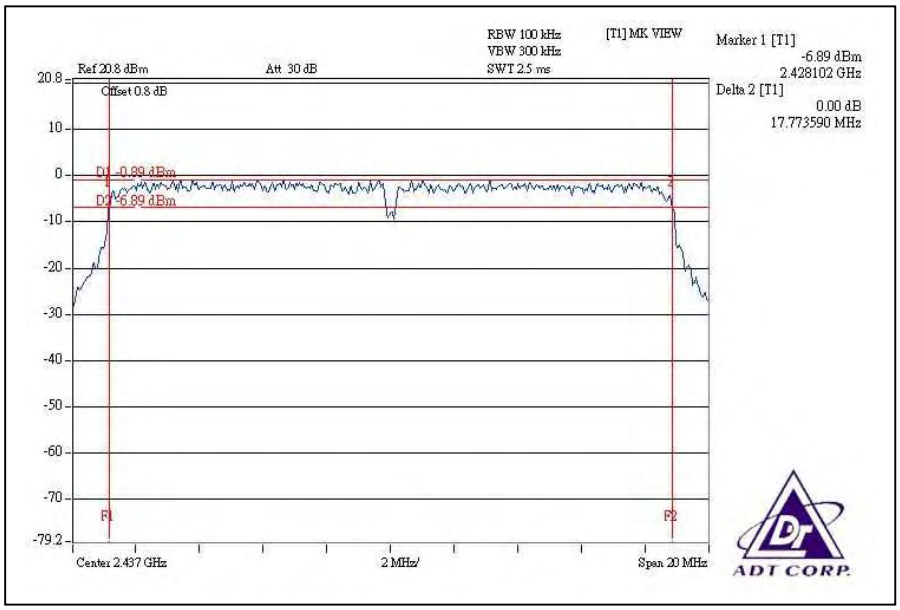
| MODULATION TYPE | BPSK | TRANSFER RATE | 13Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---|---|---|---|---|---|
| | | CHAIN(0) | CHAIN(1) | | |
| 1 | 2412 | 17.74 | 17.68 | 0.5 | PASS |
| 6 | 2437 | 17.77 | 17.70 | 0.5 | PASS |
| 11 | 2462 | 17.77 | 17.71 | 0.5 | PASS |

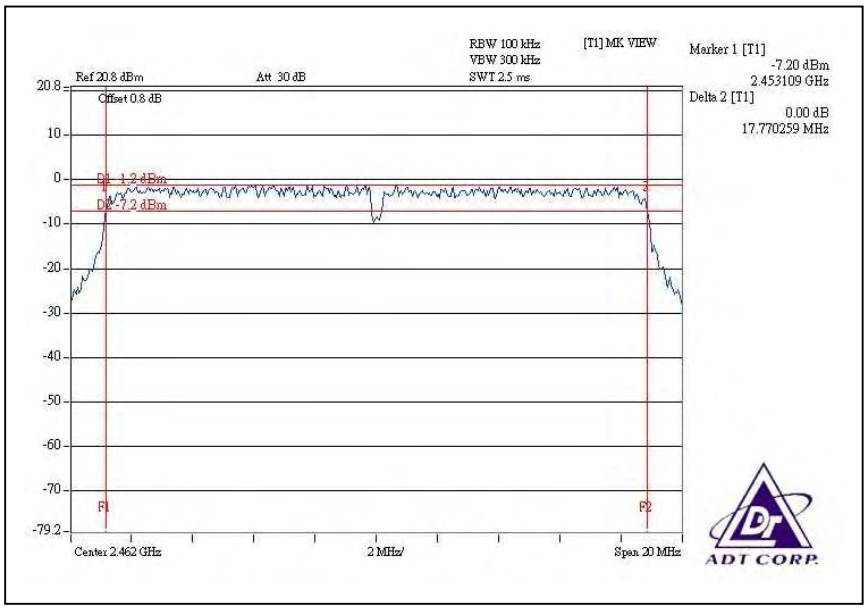
For Chain(0): CH1



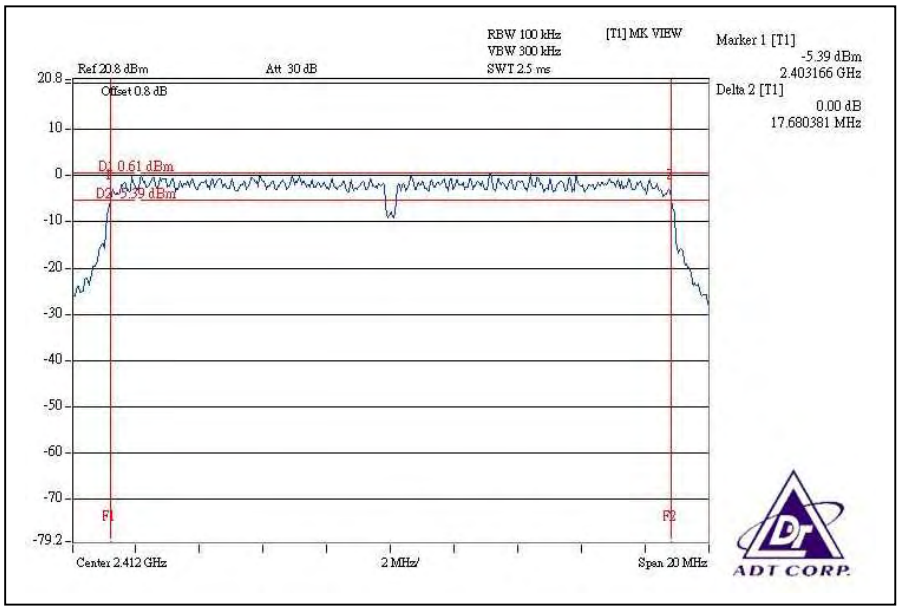
CH6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-6.89 dBm
2.428102 GHz
Delta 2 [T1]
0.00 dB
17.773590 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1 -0.89 dBm
D2 -6.89 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

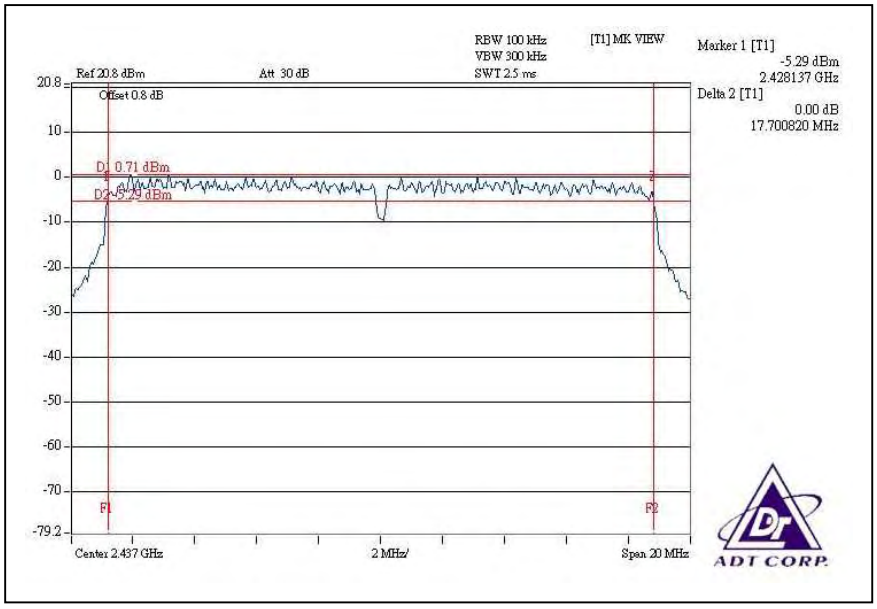
CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-7.20 dBm
2.453109 GHz
Delta 2 [T1]
0.00 dB
17.770259 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1 -1.2 dBm
D2 -7.2 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

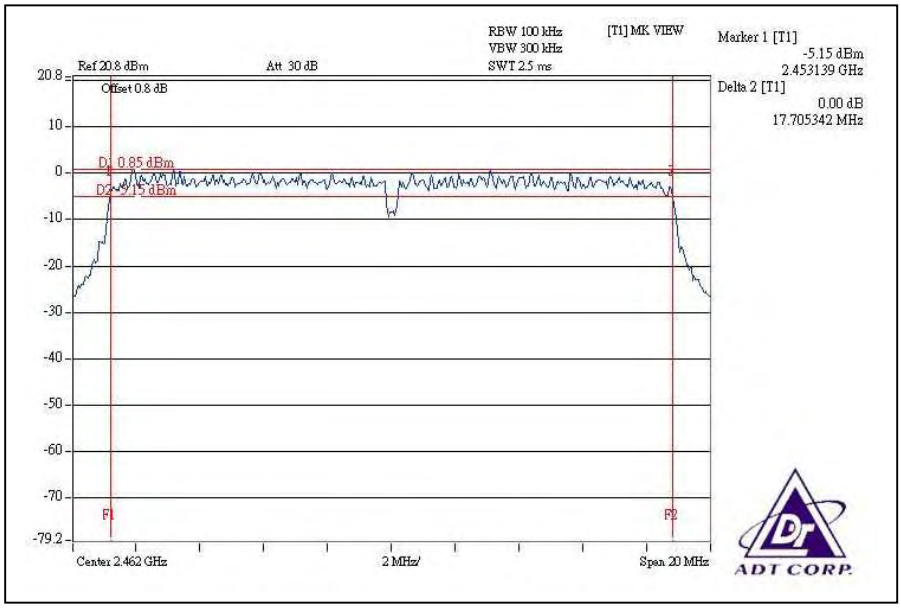
For CHAIN(1): CH1




CH6



CH11

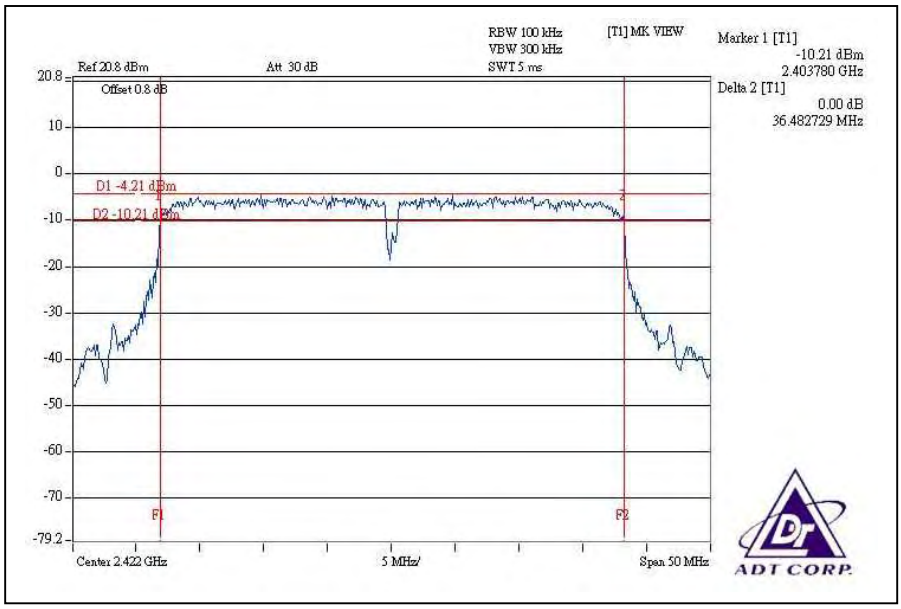

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-5.15 dBm
2.453139 GHz
Delta 2 [T1]
0.00 dB
17.705342 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1: 0.85 dBm
D2: -9.15 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

## DRAFT 802.11n (40MHz) OFDM MODULATION:

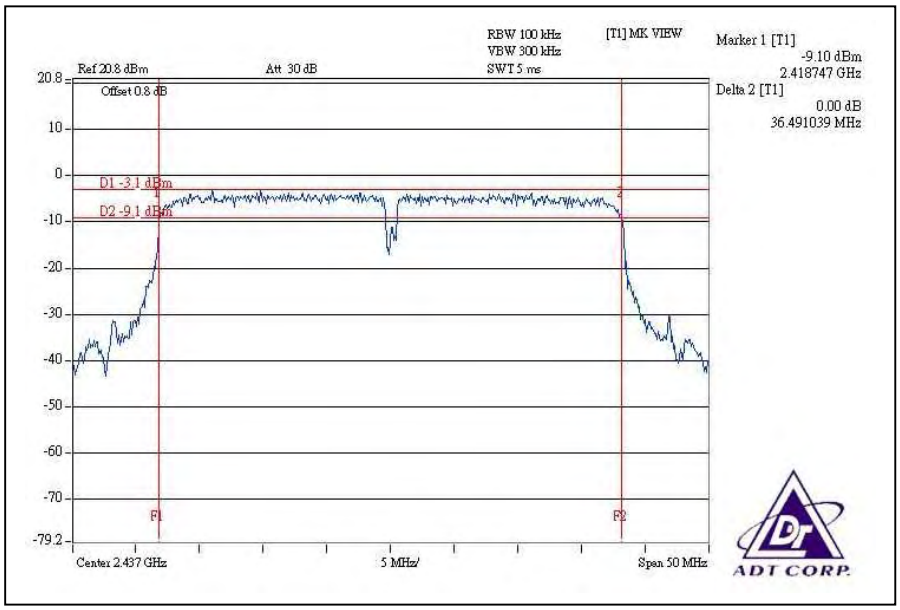
| MODULATION TYPE | BPSK | TRANSFER RATE | 27Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---|---|---|---|---|---|
| | | CHAIN(0) | CHAIN(1) | | |
| 1 | 2422 | 36.48 | 36.46 | 0.5 | PASS |
| 4 | 2437 | 36.49 | 36.17 | 0.5 | PASS |
| 7 | 2452 | 36.50 | 36.45 | 0.5 | PASS |

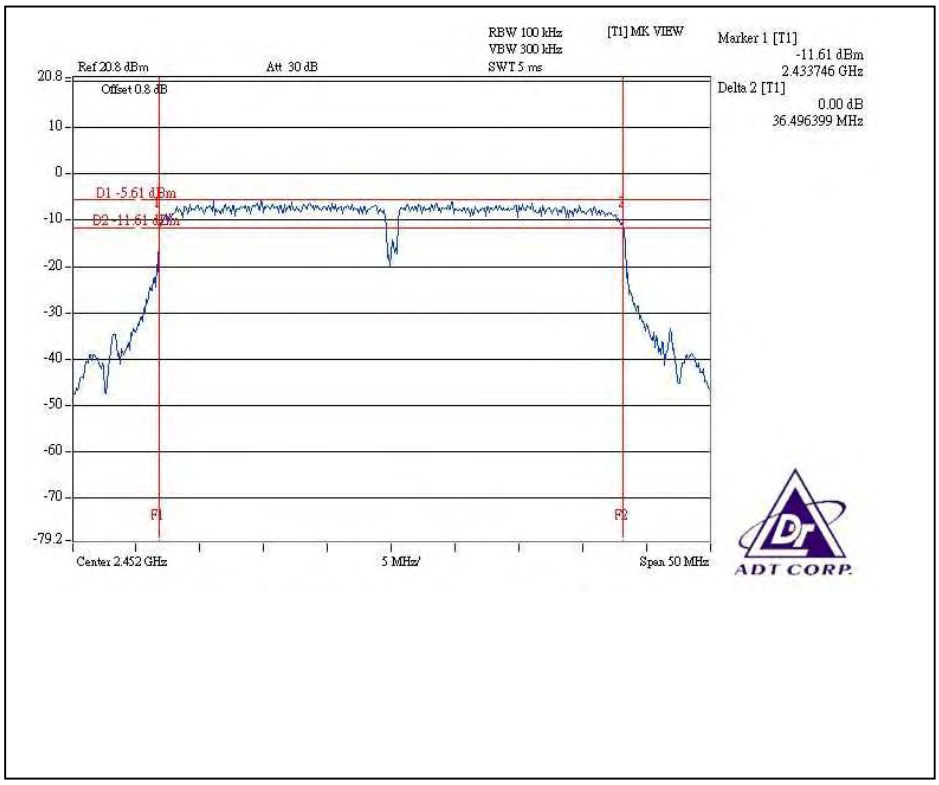
For Chain (0): CH1



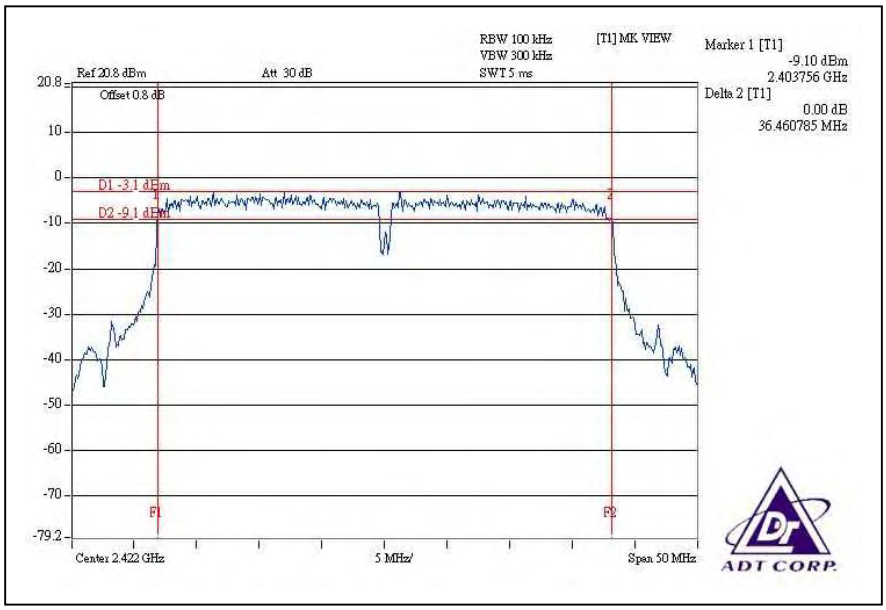
CH4


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-9.10 dBm
2.418747 GHz
Delta 2 [T1]
0.00 dB
36.491039 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1 -3.1 dBm
D2 -9.1 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.437 GHz
5 MHz/
Span 50 MHz
ADT CORP.

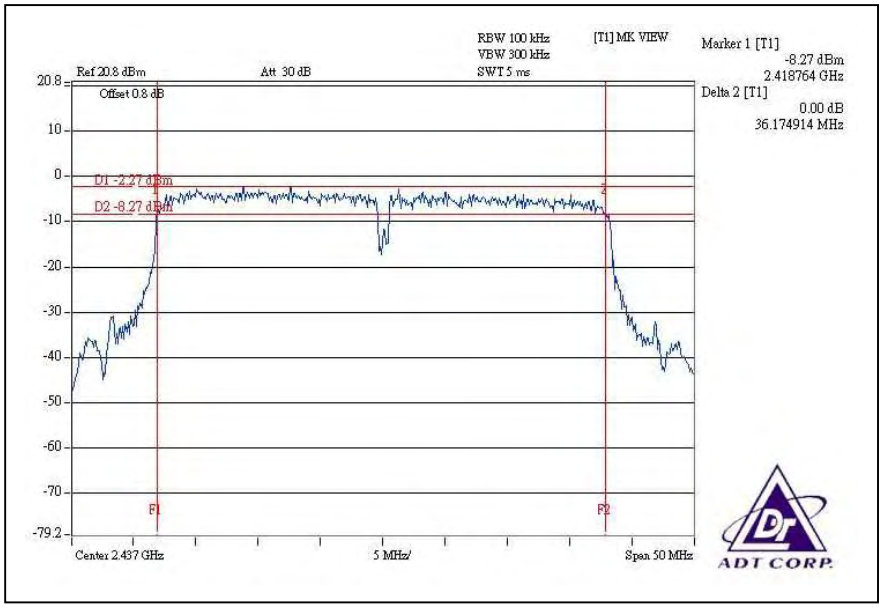
CH7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-11.61 dBm
2.433746 GHz
Delta 2 [T1]
0.00 dB
36.496399 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
D1 -5.61 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz
ADT CORP.

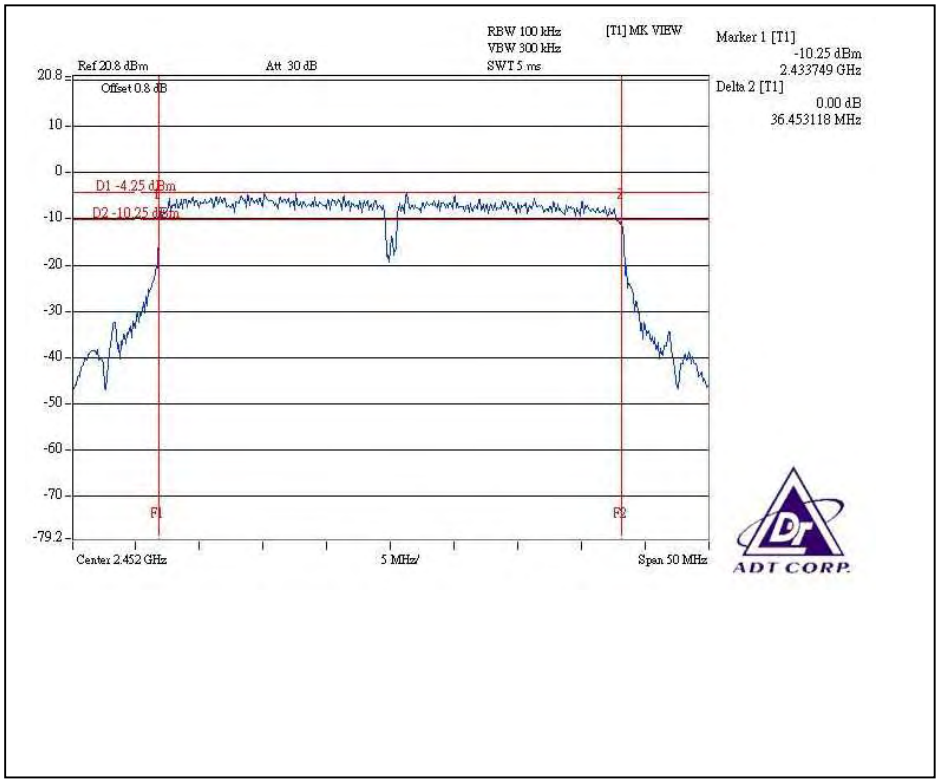
For Chain (1): CH1




CH4



CH7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-10.25 dBm
2.433749 GHz
Delta 2 [T1]
0.00 dB
36.453118 MHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
D1 -4.25 dBm
D2 -10.25 dBm
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz
ADT CORP.

## 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 INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|---|---|---|---|
| R&S SPECTRUM ANALYZER | FSP40 | 100036 | Dec. 17, 2008 |
| Agilent SIGNAL GENERATOR | E8257C | MY43320668 | Dec. 25, 2008 |
| TEKTRONIX OSCILLOSCOPE | TDS380 | B016335 | July 15, 2009 |
| 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 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 reading on oscilloscope. Record the power level.

### 4.4.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.4.5 TEST SETUP


### 4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

## 4.4.7 TEST RESULTS

### 802.11b DSSS MODULATION:

| MODULATION TYPE | CCK | TRANSFER RATE | 11Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) | PEAK POWER OUTPUT (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---|---|---|---|---|---|
| 1 | 2412 | 74.131 | 18.70 | 30 | PASS |
| 6 | 2437 | 67.608 | 18.30 | 30 | PASS |
| 11 | 2462 | 70.795 | 18.50 | 30 | PASS |

### 802.11g OFDM MODULATION:

| MODULATION TYPE | BPSK | TRANSFER RATE | 6Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) | PEAK POWER OUTPUT (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---|---|---|---|---|---|
| 1 | 2412 | 98.175 | 19.92 | 30 | PASS |
| 6 | 2437 | 95.499 | 19.80 | 30 | PASS |
| 11 | 2462 | 90.782 | 19.58 | 30 | PASS |

## DRAFT 802.11n (20MHz) OFDM MODULATION:

| MODULATION TYPE | BPSK | TRANSFER RATE | 13Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) | | PEAK POWER OUTPUT (dBm) | | TOTAL PEAK POWER (mW) | TOTAL PEAK POWER (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | CHAIN(0) | CHAIN(1) | CHAIN(0) | CHAIN(1) | | | | |
| 1 | 2412 | 87.297 | 85.114 | 19.41 | 19.30 | 172.411 | 22.37 | 30 | PASS |
| 6 | 2437 | 84.918 | 84.140 | 19.29 | 19.25 | 169.058 | 22.28 | 30 | PASS |
| 11 | 2462 | 86.099 | 82.985 | 19.35 | 19.19 | 169.084 | 22.28 | 30 | PASS |

## DRAFT 802.11n (40MHz) OFDM MODULATION:

| MODULATION TYPE | BPSK | TRANSFER RATE | 26Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) | | PEAK POWER OUTPUT (dBm) | | TOTAL PEAK POWER (mW) | TOTAL PEAK POWER (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | CHAIN(0) | CHAIN(1) | CHAIN(0) | CHAIN(1) | | | | |
| 1 | 2422 | 54.954 | 53.951 | 17.40 | 17.32 | 108.905 | 20.37 | 30 | PASS |
| 4 | 2437 | 63.096 | 54.576 | 18.00 | 17.37 | 117.672 | 20.71 | 30 | PASS |
| 7 | 2452 | 35.318 | 33.113 | 15.48 | 15.20 | 68.431 | 18.35 | 30 | 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 | Dec. 17, 2008 |

**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.

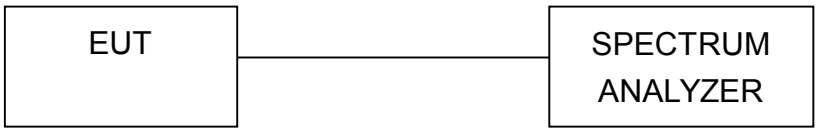
### 4.5.3 TEST PROCEDURE

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 3kHz RBW and 30kHz 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 DEVIATION FROM TEST STANDARD

No deviation

### 4.5.5 TEST SETUP




### 4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

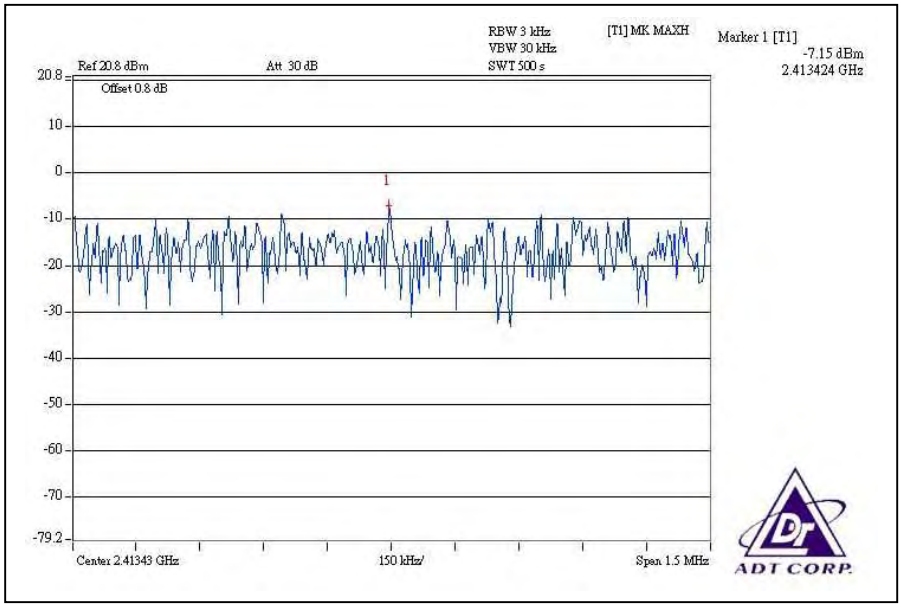
## 4.5.7 TEST RESULTS

### 802.11b DSSS MODULATION:

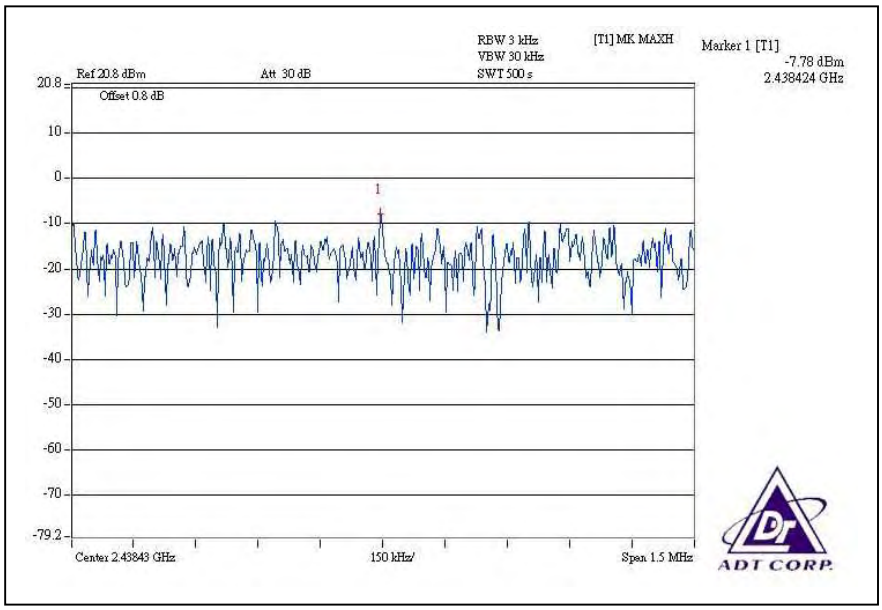
| MODULATION TYPE | CCK | TRANSFER RATE | 11Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---|---|---|---|---|
| 1 | 2412 | -7.15 | 8 | PASS |
| 6 | 2437 | -7.78 | 8 | PASS |
| 11 | 2462 | -7.43 | 8 | PASS |

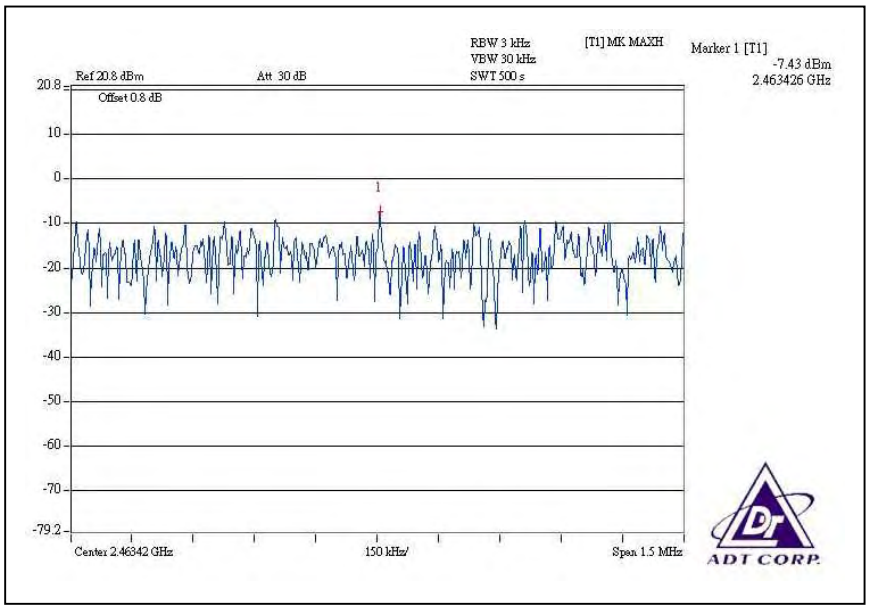
CH1



CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.78 dBm
2.438424 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.43843 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH11

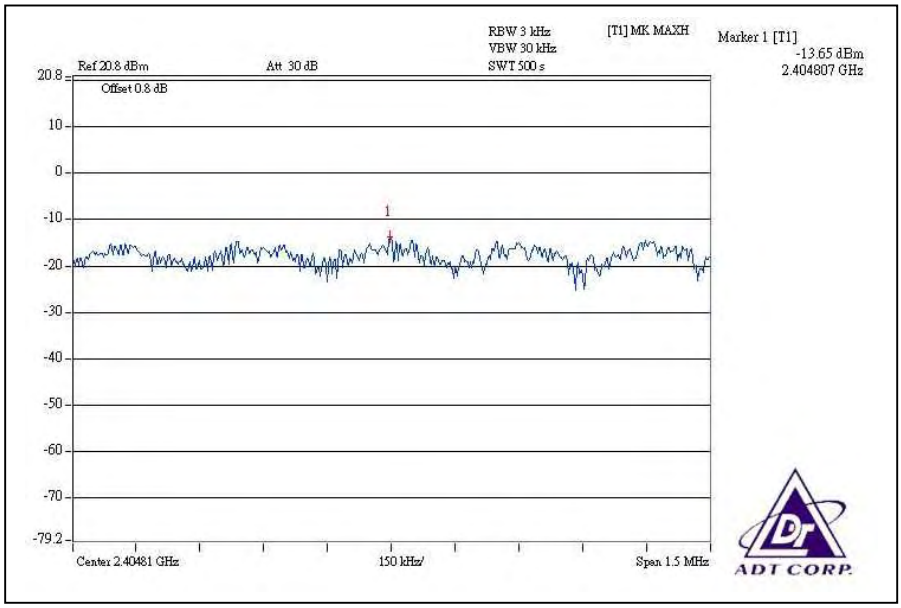

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.43 dBm
2.463426 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.46342 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

## 802.11g OFDM MODULATION:

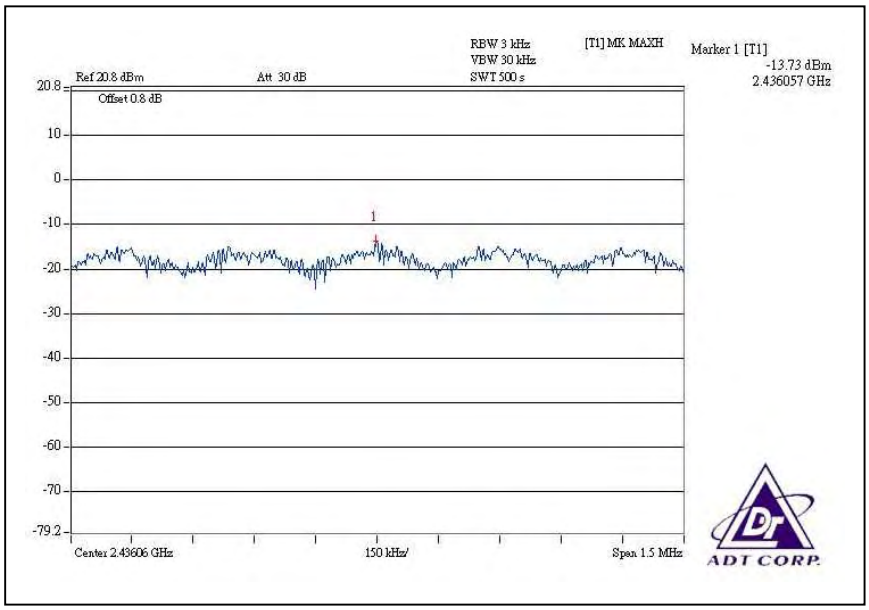
| MODULATION TYPE | BPSK | TRANSFER RATE | 6Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---|---|---|---|---|
| 1 | 2412 | -13.65 | 8 | PASS |
| 6 | 2437 | -13.73 | 8 | PASS |
| 11 | 2462 | -14.36 | 8 | PASS |

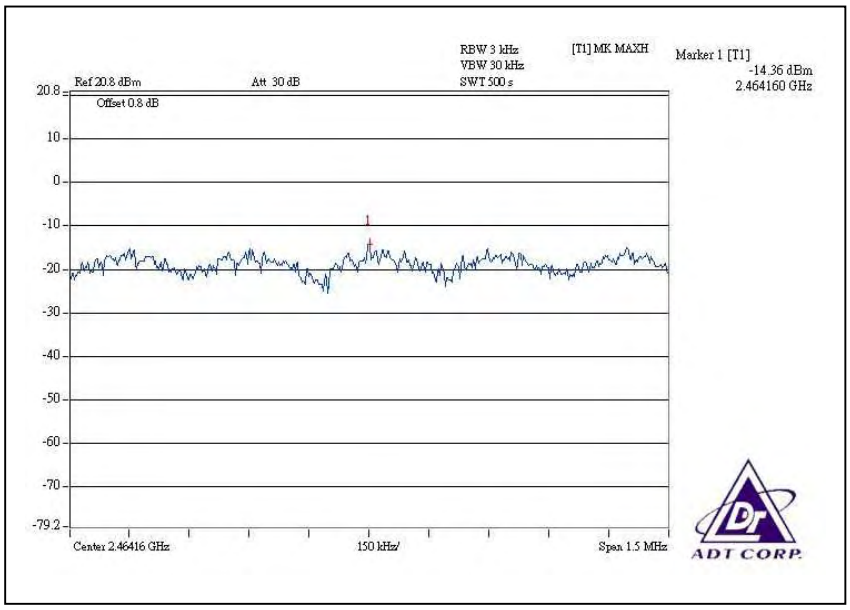
CH1



CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.73 dBm
2.436057 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.43606 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH11

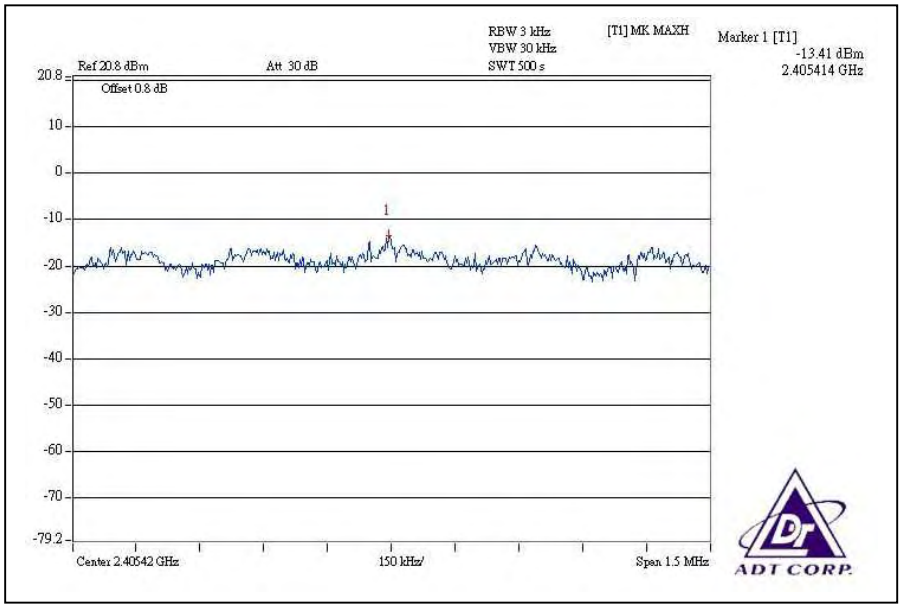

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.36 dBm
2.464160 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.46416 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

## DRAFT 802.11n (20MHz) OFDM MODULATION:

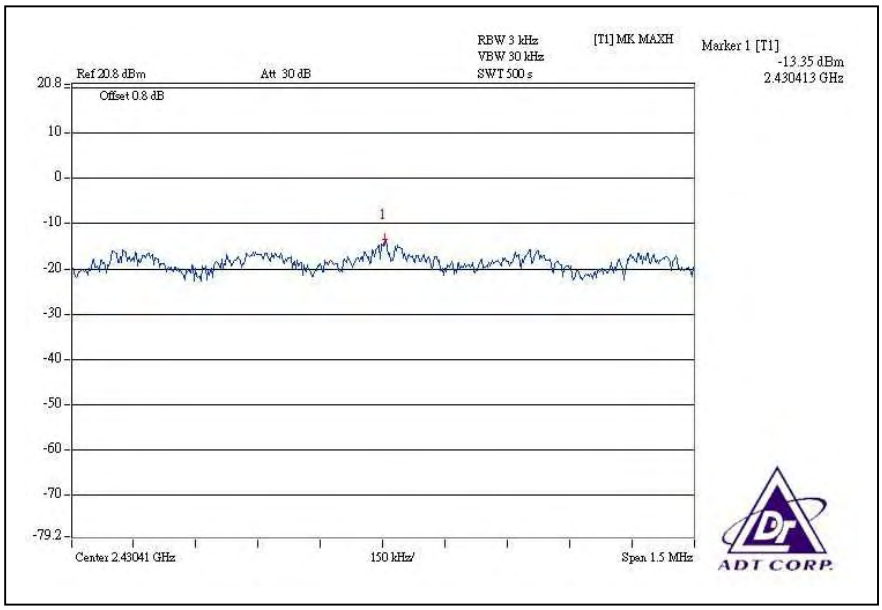
| MODULATION TYPE | BPSK | TRANSFER RATE | 13Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3kHz BW (mW) | | RF POWER LEVEL IN 3kHz BW (dBm) | | TOTAL POWER DENSITY (mW) | TOTAL POWER DENSITY (dBm) | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | CHAIN(0) | CHAIN(1) | CHAIN(0) | CHAIN(1) | | | | |
| 1 | 2412 | 0.046 | 0.048 | -13.41 | -13.19 | 0.094 | -10.27 | 8 | PASS |
| 6 | 2437 | 0.046 | 0.045 | -13.35 | -13.43 | 0.091 | -10.41 | 8 | PASS |
| 11 | 2462 | 0.039 | 0.043 | -14.12 | -13.71 | 0.082 | -10.86 | 8 | PASS |

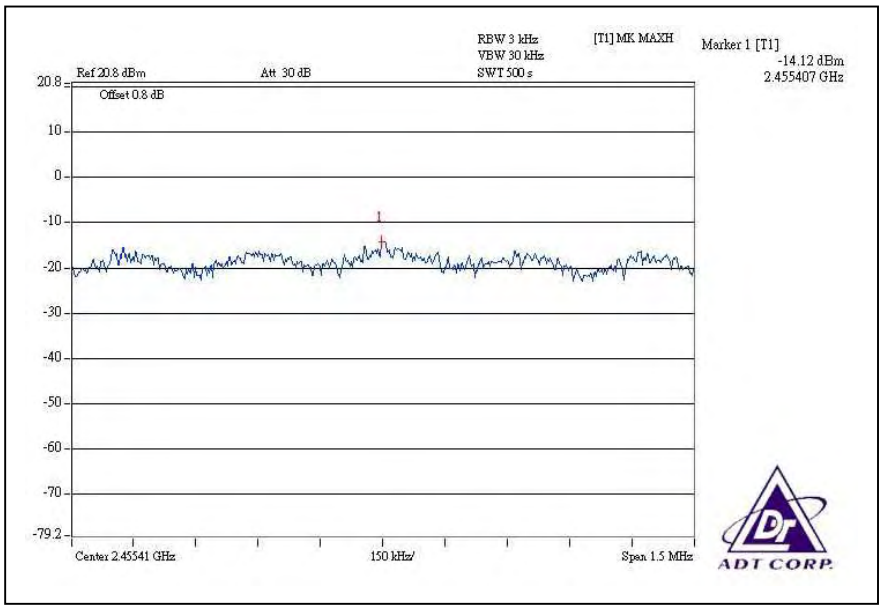
For Chain(0): CH1



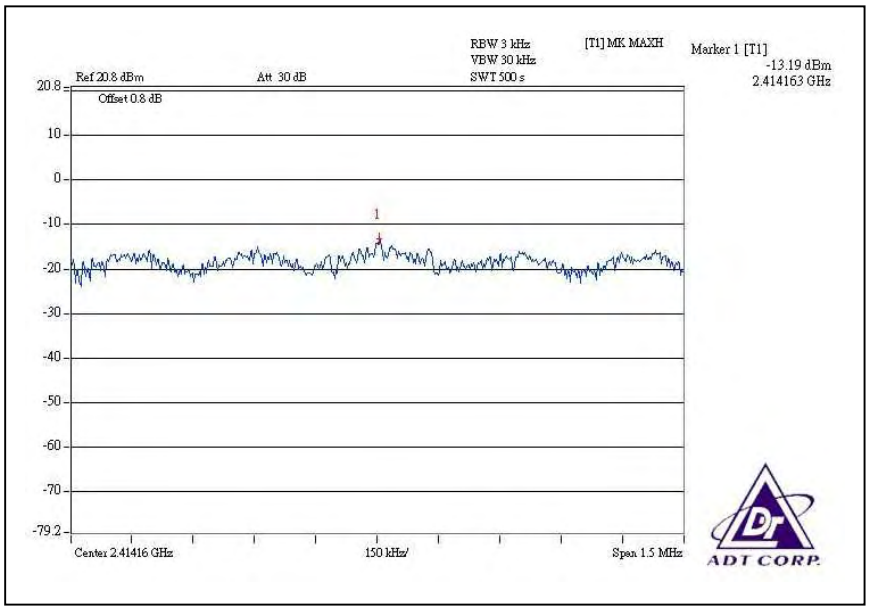
CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.35 dBm
2.430413 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.43041 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

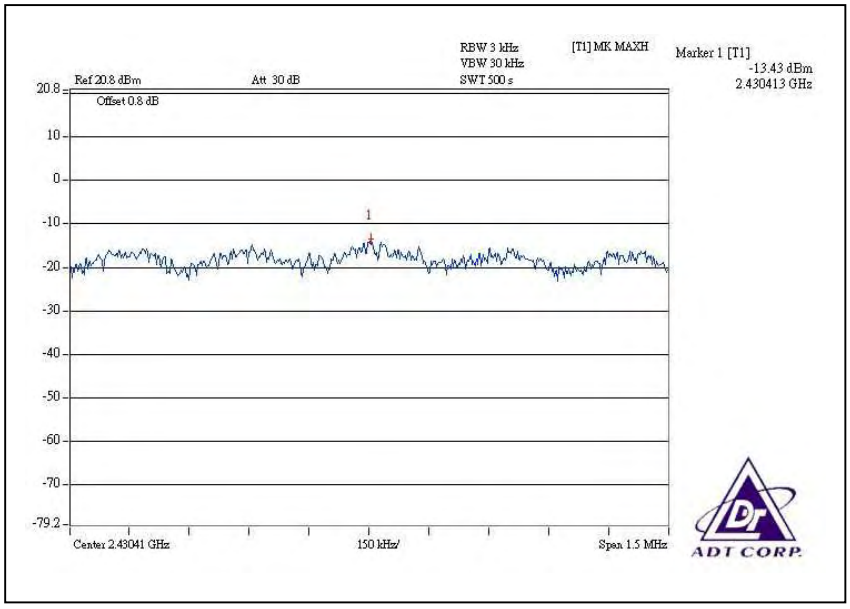
CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.12 dBm
2.455407 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.45541 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

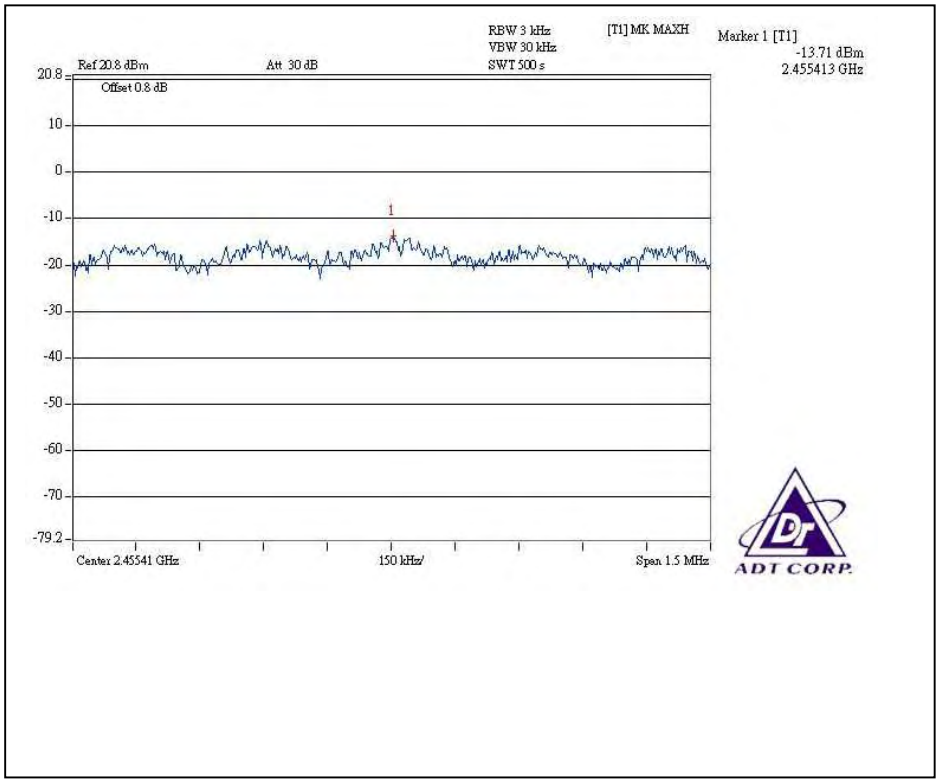
For Chain (1): CH1




CH6



CH11

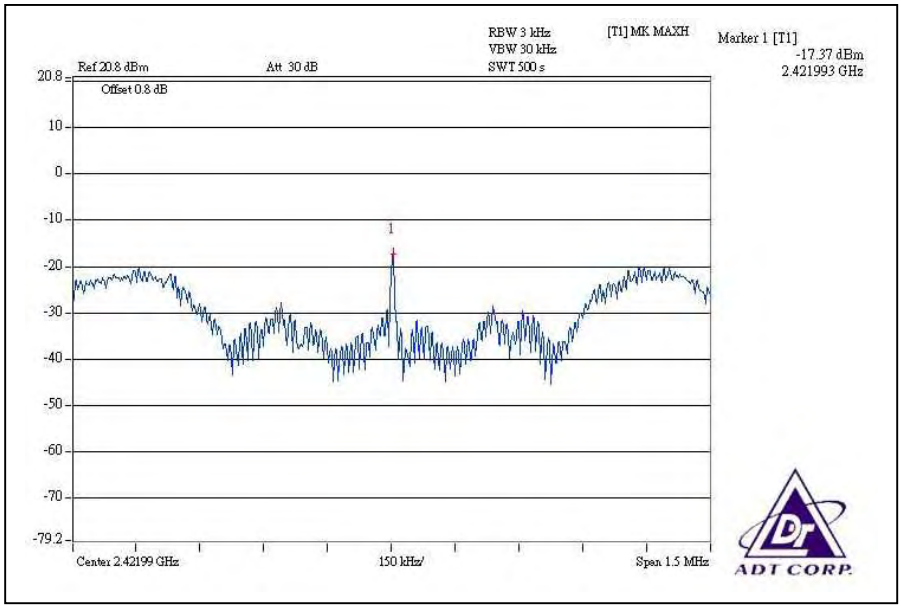

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.71 dBm
2.455413 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
1
Center 2.45541 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

## DRAFT 802.11n (40MHz) OFDM MODULATION:

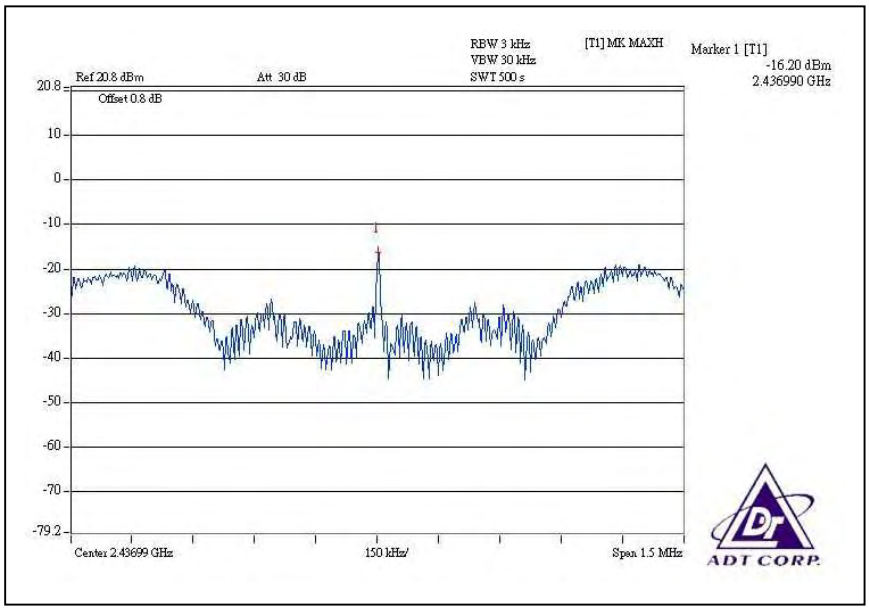
| MODULATION TYPE | BPSK | TRANSFER RATE | 27Mbps |
|---|---|---|---|
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 25deg.C, 60%RH, 965hPa |
| TESTED BY | Phoenix Huang | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3kHz BW (mW) | | RF POWER LEVEL IN 3kHz BW (dBm) | | TOTAL POWER DENSITY (mW) | TOTAL POWER DENSITY (dBm) | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | CHAIN(0) | CHAIN(1) | CHAIN(0) | CHAIN(1) | | | | |
| 1 | 2422 | 0.018 | 0.019 | -17.37 | -17.12 | 0.037 | -14.32 | 8 | PASS |
| 4 | 2437 | 0.024 | 0.023 | -16.20 | -16.32 | 0.047 | -13.28 | 8 | PASS |
| 7 | 2452 | 0.010 | 0.013 | -20.00 | -18.77 | 0.023 | -16.38 | 8 | PASS |

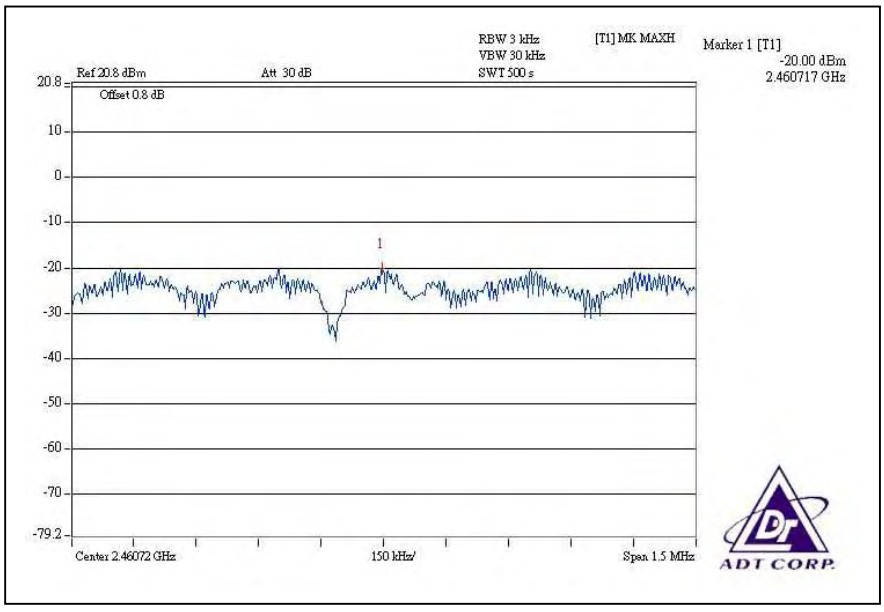
For Chain (0): CH1



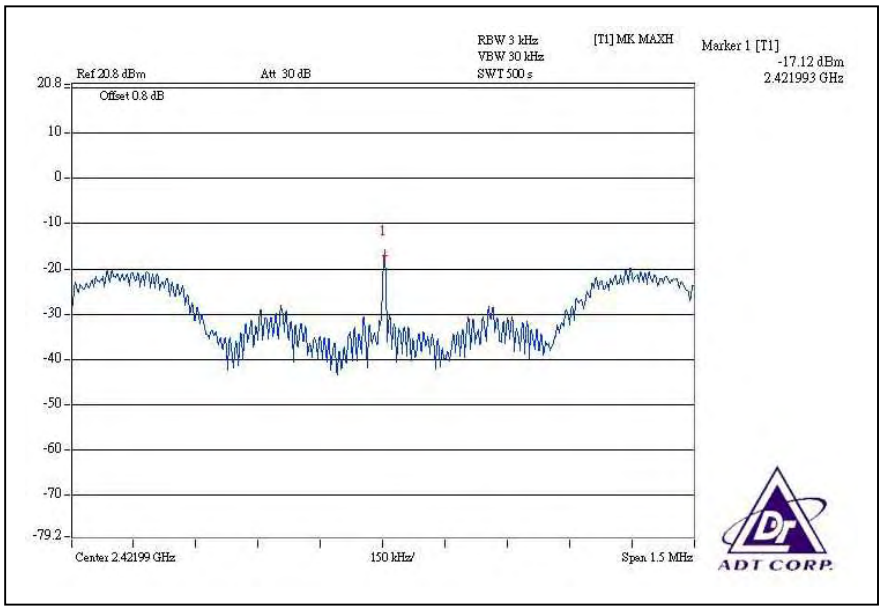
CH4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-16.20 dBm
2.436990 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.43699 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

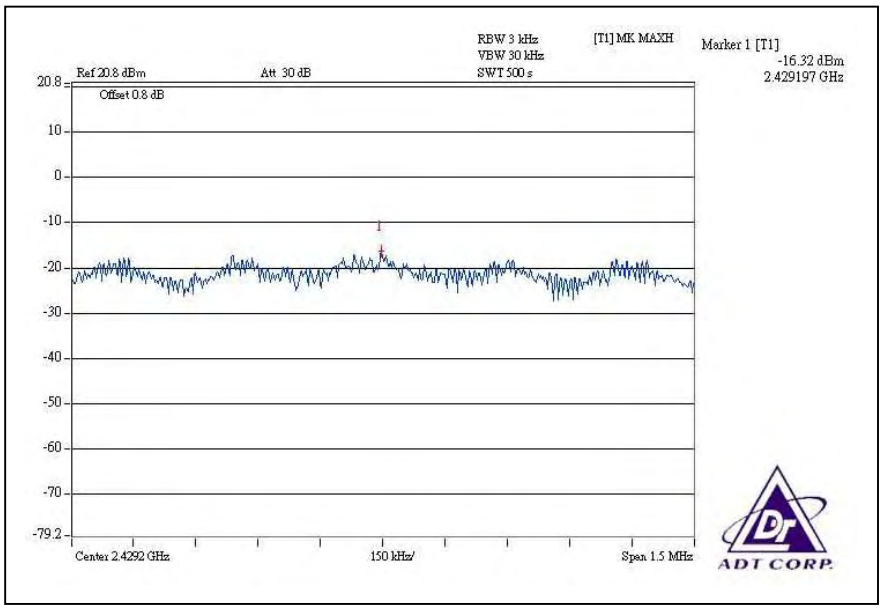
CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-20.00 dBm
2.460717 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.46072 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

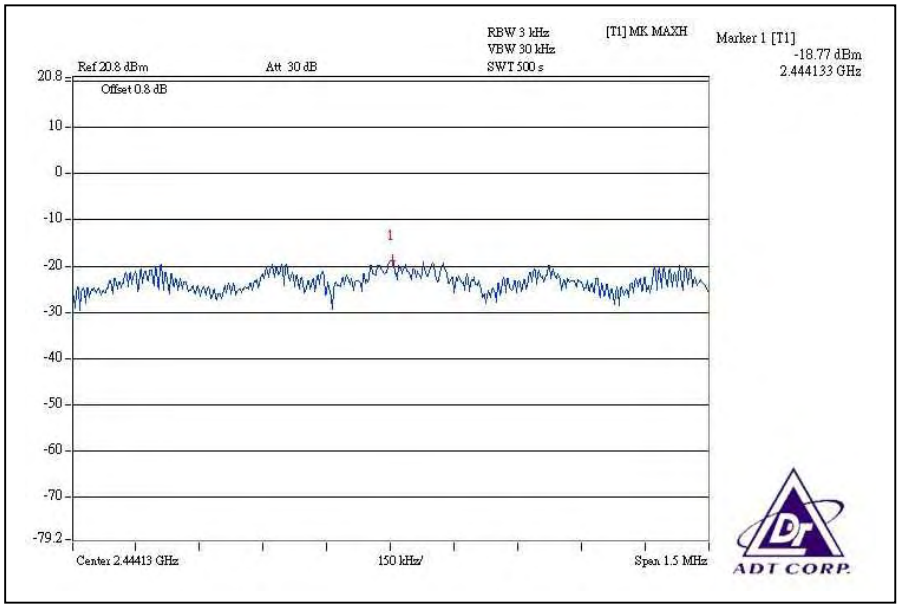
For Chain (1): CH1




CH4



CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-18.77 dBm
2.444133 GHz
Ref 20.8 dBm
Att 30 dB
Offset 0.8 dB
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
1
Center 2.44413 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.