# FCC TEST REPORT
# (WLAN)

| | |
|---|---|
| **REPORT NO.:** | RF110711C24 |
| **MODEL NO.:** | F-01D |
| **FCC ID:** | VQK-F01D |
| **RECEIVED:** | Jul. 11, 2011 |
| **TESTED:** | Aug. 11 ~ Aug. 16, 2011 |
| **ISSUED:** | Aug. 18, 2011 |

| | |
|---|---|
| **APPLICANT:** | FUJITSU LIMITED |
| **ADDRESS:** | 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki 211-8588, Japan |

| | |
|---|---|
| **ISSUED BY:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch |
| **LAB ADDRESS:** | No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien 244, Taiwan, R.O.C. |
| **TEST LOCATION:** | No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C. |

# TABLE OF CONTENTS

# RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|---|---|---|
| Original release | NA | Aug. 18, 2011 |

# 1. CERTIFICATION

**PRODUCT:** Tablet PC

**MODEL:** F-01D

**BRAND:** FOMA

**APPLICANT:** FUJITSU LIMITED

**TESTED:** Aug. 11 ~ Aug. 16, 2011

**TEST SAMPLE:** ENGINEERING SAMPLE

**STANDARDS:** **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.4-2003
ANSI C63.10-2009

The above equipment (Model: F-01D) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** 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 : Andrea Hsia / Specialist **DATE:** Aug. 18, 2011

APPROVED BY : Gary Chang / Technical Manager **DATE:** Aug. 18, 2011

# 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. Minimum passing margin is -13.74dB at 0.209MHz. |
| 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 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. Minimum passing margin is -4.7dB at 2483.50MHz. |
| 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. |
| 15.203 | Antenna Requirement | PASS | No antenna connector is used. |

## 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| MEASUREMENT | FREQUENCY | UNCERTAINTY |
|---|---|---|
| Conducted emissions | 9kHz~30MHz | 2.44 dB |
| Radiated emissions | 30MHz ~ 200MHz | 3.34 dB |
| | 200MHz ~1000MHz | 3.35 dB |
| | 1GHz ~ 18GHz | 2.26 dB |
| | 18GHz ~ 40GHz | 1.94 dB |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

# 3. GENERAL INFORMATION

## 3.1 GENERAL DESCRIPTION OF EUT

| | |
|---|---|
| **EUT** | Tablet PC |
| **MODEL NO.** | F-01D |
| **FCC ID** | VQK-F01D |
| **POWER SUPPLY** | 3.7Vdc (Li-ion battery)<br>5.0Vdc (Adapter) |
| **MODULATION TYPE** | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM |
| **MODULATION TECHNOLOGY** | DSSS, OFDM |
| **TRANSFER RATE** | 802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps<br>802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps<br>802.11n (20MHz): up to 72.2Mbps |
| **OPERATING FREQUENCY** | 2412 ~ 2462MHz |
| **NUMBER OF CHANNEL** | 11 |
| **OUTPUT POWER** | 11.0mW |
| **ANTENNA TYPE** | λ/4 Monopole Antenna with -1.94dBi gain |
| **ANTENNA CONNECTOR** | NA |
| **I/O PORTS** | Refer to user's manual |
| **DATA CABLE** | NA |
| **ACCESSORY DEVICES** | Adapter |

**NOTE:**

1. The EUT provides one completed transmitter and one receiver.

| MODULATION MODE | TX FUNCTION |
|---|---|
| **802.11b** | 1TX |
| **802.11g** | 1TX |
| **802.11n (20MHz)** | 1TX |

2. The EUT use the following internal Li-ion battery:

| | |
|---|---|
| **RATING** | 3.7Vdc, 6560mAh |

3. The EUT use the following Adapter:

| **ADAPTER** | |
|---|---|
| **BRAND** | NTT docomo |
| **MODEL** | F05 |
| **INPUT** | 110-240Vac~ 50/60Hz 0.22A |
| **OUTPUT** | 5Vdc, 1.6A |
| **POWER LINE** | DC: 0.65m non-shield without core<br>AC: 1.0m non-shield without core |

4. The following accessory is for support units only.

| PRODUCT | BRAND | DESCRIPTION |
|---|---|---|
| USB cable | NA | 0.8m non-shielded cable without core |

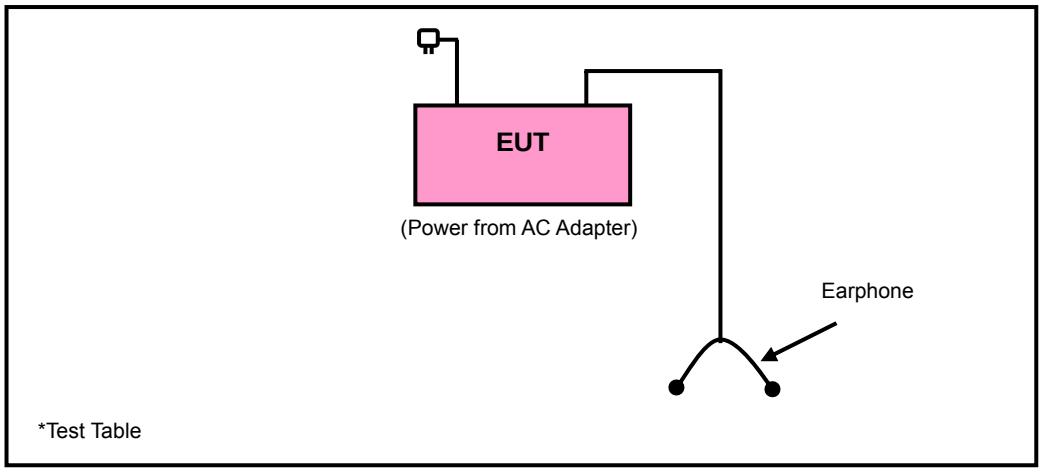
5. Hardware version: V2.1.0.
6. Software version: R14.3.
7. IMEI Code: 357623040003707& 357623040013656.
8. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

## 3.2 DESCRIPTION OF TEST MODES

11 channels are provided for 802.11b, 802.11g and 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 | | |

### 3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



## 3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
**PLC:** Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

**RADIATED EMISSION TEST (ABOVE 1GHz):**

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis 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) | AXIS |
|---|---|---|---|---|---|---|
| 802.11b | 1 to 11 | 1, 6, 11 | DSSS | DBPSK | 1.0 | X |
| 802.11g | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.0 | X |
| 802.11n (20MHz) | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.5 | X |

**RADIATED EMISSION TEST (BELOW 1GHz):**

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis 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) | AXIS |
|---|---|---|---|---|---|---|
| 802.11b | 1 to 11 | 6 | DSSS | DBPSK | 1.0 | X |

**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 | 6 | DSSS | DBPSK | 1.0 |

**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 | DBPSK | 1.0 |
| 802.11g | 1 to 11 | 1, 11 | OFDM | BPSK | 6.0 |
| 802.11n (20MHz) | 1 to 11 | 1, 11 | OFDM | BPSK | 6.5 |

**ANTENNA PORT CONDUCTED MEASUREMENT:**

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ 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 | DBPSK | 1.0 |
| 802.11g | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.0 |
| 802.11n (20MHz) | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.5 |

**TEST CONDITION:**

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS | INPUT POWER | TESTED BY |
|---|---|---|---|
| RE≥1G | 25deg. C, 65%RH | 120Vac, 60Hz | Brad Wu |
| RE<1G | 25deg. C, 65%RH | 120Vac, 60Hz | Brad Wu |
| PLC | 25deg. C, 65%RH | 120Vac, 60Hz | Mark Liao |
| APCM | 25deg. C, 65%RH | 120Vac, 60Hz | Mark Liao |

## 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. 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
ANSI C63.10-2009

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 | EARPHONE | PHILIPS | SBC HL125 | NA | NA |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|---|---|
| 1 | 1.2 m wrapped shielded wire, terminated with 3.5mm phone plug via drain wire, w/o core. |

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

# 4. TEST TYPES AND RESULTS

## 4.1 RADIATED EMISSION MEASUREMENT

### 4.1.1 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.

## 4.1.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|---|---|---|---|---|
| Test Receiver ROHDE & SCHWARZ | ESIB7 | 100212 | Aug. 02, 2011 | Aug. 01, 2012 |
| Spectrum Analyzer ROHDE & SCHWARZ | FSP 40 | 100041 | Jul. 21, 2011 | Jul. 20, 2012 |
| BILOG Antenna SCHWARZBECK | VULB9168 | 9168-160 | Apr. 13, 2011 | Apr. 12, 2012 |
| HORN Antenna SCHWARZBECK | 9120D | 9120D-405 | Feb. 08, 2011 | Feb. 07, 2012 |
| HORN Antenna SCHWARZBECK | BBHA 9170 | BBHA9170243 | Dec. 27, 2010 | Dec. 26, 2011 |
| Preamplifier Agilent | 8447D | 2944A10633 | Nov. 02, 2010 | Nov. 01, 2011 |
| Preamplifier Agilent | 8449B | 3008A01964 | Nov. 02, 2010 | Nov. 01, 2011 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 295014/4 | Sep. 03, 2010 | Sep. 02, 2011 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 12738/6 | Sep. 03, 2010 | Sep. 02, 2011 |
| Software ADT. | ADT_Radiated_ V7.6.15.9.2 | NA | NA | NA |
| Antenna Tower inn-co GmbH | MA 4000 | 013303 | NA | NA |
| Antenna Tower Controller inn-co GmbH | CO2000 | 017303 | NA | NA |
| Turn Table ADT. | TT100. | TT93021703 | NA | NA |
| Turn Table Controller ADT. | SC100. | SC93021703 | 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 HwaYa Chamber 3.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 988962.

5. The IC Site Registration No. is IC 7450F-3.

### 4.1.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. 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 lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

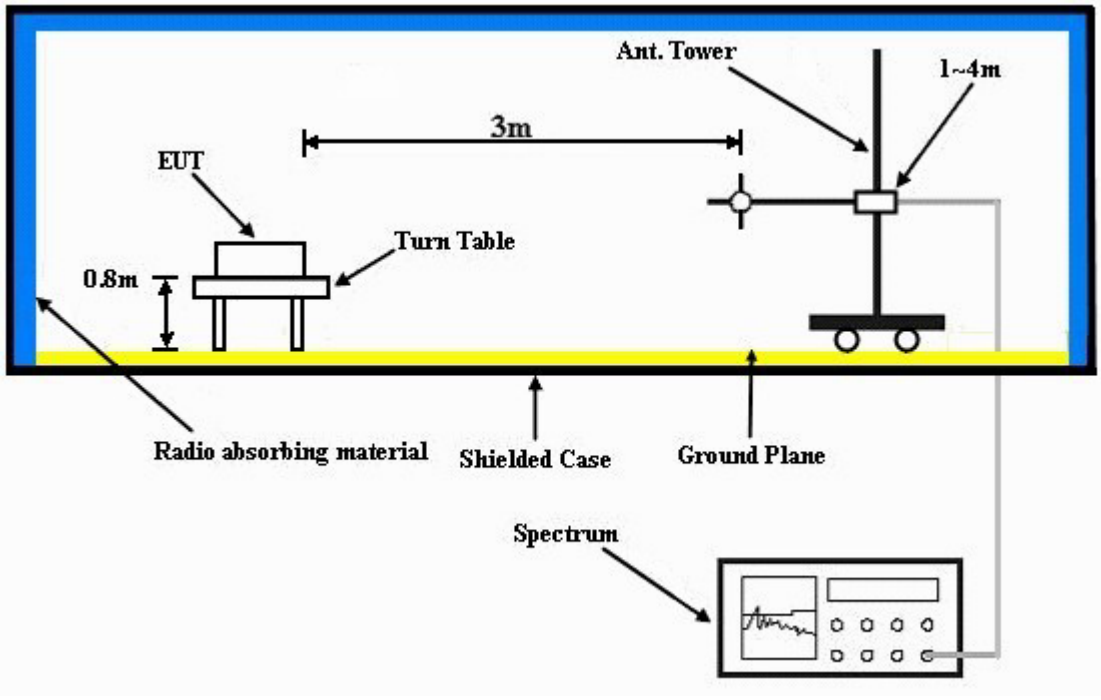
**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

### 4.1.5 TEST SETUP




For the actual test configuration, please refer to the attached file (Test Setup Photo).

### 4.1.6 EUT OPERATING CONDITIONS

a. Placed the EUT on a testing table.

b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

## 4.1.7 TEST RESULTS

**802.11b**

| 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, 65%RH | TESTED BY | Brad Wu |

| 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 | 55.8 PK | 74.0 | -18.2 | 1.33 H | 69 | 23.80 | 32.00 |
| 2 | 2390.00 | 46.1 AV | 54.0 | -7.9 | 1.33 H | 69 | 14.10 | 32.00 |
| 3 | *2412.00 | 101.1 PK | | | 1.33 H | 69 | 69.10 | 32.00 |
| 4 | *2412.00 | 96.2 AV | | | 1.33 H | 69 | 64.20 | 32.00 |
| 5 | 4824.00 | 49.9 PK | 74.0 | -24.1 | 1.05 H | 116 | 11.40 | 38.50 |
| 6 | 4824.00 | 36.4 AV | 54.0 | -17.6 | 1.05 H | 116 | -2.10 | 38.50 |
| 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 | 55.1 PK | 74.0 | -18.9 | 1.34 V | 136 | 23.10 | 32.00 |
| 2 | 2390.00 | 45.3 AV | 54.0 | -8.7 | 1.34 V | 136 | 13.30 | 32.00 |
| 3 | *2412.00 | 98.0 PK | | | 1.34 V | 136 | 66.00 | 32.00 |
| 4 | *2412.00 | 93.2 AV | | | 1.34 V | 136 | 61.20 | 32.00 |
| 5 | 4824.00 | 49.4 PK | 74.0 | -24.6 | 1.02 V | 24 | 10.90 | 38.50 |
| 6 | 4824.00 | 35.9 AV | 54.0 | -18.1 | 1.02 V | 24 | -2.60 | 38.50 |

**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, 65%RH | TESTED BY | Brad Wu |

| 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 | *2437.00 | 102.1 PK | | | 1.28 H | 85 | 70.00 | 32.10 |
| 2 | *2437.00 | 97.0 AV | | | 1.28 H | 85 | 64.90 | 32.10 |
| 3 | 4874.00 | 50.2 PK | 74.0 | -23.8 | 1.06 H | 123 | 11.60 | 38.60 |
| 4 | 4874.00 | 36.8 AV | 54.0 | -17.2 | 1.06 H | 123 | -1.80 | 38.60 |
| 5 | 7311.00 | 53.9 PK | 74.0 | -20.1 | 1.05 H | 113 | 9.00 | 44.90 |
| 6 | 7311.00 | 41.3 AV | 54.0 | -12.7 | 1.05 H | 113 | -3.60 | 44.90 |
| 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 | *2437.00 | 98.8 PK | | | 1.30 V | 131 | 66.70 | 32.10 |
| 2 | *2437.00 | 94.0 AV | | | 1.30 V | 131 | 61.90 | 32.10 |
| 3 | 4874.00 | 49.8 PK | 74.0 | -24.2 | 1.08 V | 135 | 11.20 | 38.60 |
| 4 | 4874.00 | 36.2 AV | 54.0 | -17.8 | 1.08 V | 135 | -2.40 | 38.60 |
| 5 | 7311.00 | 53.4 PK | 74.0 | -20.6 | 1.08 V | 126 | 8.50 | 44.90 |
| 6 | 7311.00 | 40.8 AV | 54.0 | -13.2 | 1.08 V | 126 | -4.10 | 44.90 |

**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, 65%RH | TESTED BY | Brad Wu |

| 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 | 103.1 PK | | | 1.26 H | 283 | 70.90 | 32.20 |
| 2 | *2462.00 | 98.0 AV | | | 1.26 H | 283 | 65.80 | 32.20 |
| 3 | 2483.50 | 56.9 PK | 74.0 | -17.1 | 1.26 H | 283 | 24.60 | 32.30 |
| 4 | 2483.50 | 46.5 AV | 54.0 | -7.5 | 1.26 H | 283 | 14.20 | 32.30 |
| 5 | 4924.00 | 50.4 PK | 74.0 | -23.6 | 1.26 H | 283 | 11.60 | 38.80 |
| 6 | 4924.00 | 37.1 AV | 54.0 | -16.9 | 1.26 H | 283 | -1.70 | 38.80 |
| 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 | 99.7 PK | | | 1.28 V | 130 | 67.50 | 32.20 |
| 2 | *2462.00 | 94.8 AV | | | 1.28 V | 130 | 62.60 | 32.20 |
| 3 | 2483.50 | 56.1 PK | 74.0 | -17.9 | 1.28 V | 130 | 23.80 | 32.30 |
| 4 | 2483.50 | 45.6 AV | 54.0 | -8.4 | 1.28 V | 130 | 13.30 | 32.30 |
| 5 | 4924.00 | 50.0 PK | 74.0 | -24.0 | 1.06 V | 125 | 11.20 | 38.80 |
| 6 | 4924.00 | 36.6 AV | 54.0 | -17.4 | 1.06 V | 125 | -2.20 | 38.80 |

**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.

## 802.11g

| 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, 65%RH | TESTED BY | Brad Wu |

| 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 | 60.2 PK | 74.0 | -13.8 | 1.28 H | 282 | 28.20 | 32.00 |
| 2 | 2390.00 | 47.1 AV | 54.0 | -6.9 | 1.28 H | 282 | 15.10 | 32.00 |
| 3 | *2412.00 | 104.2 PK | | | 1.28 H | 282 | 72.20 | 32.00 |
| 4 | *2412.00 | 94.5 AV | | | 1.28 H | 282 | 62.50 | 32.00 |
| 5 | 4824.00 | 49.6 PK | 74.0 | -24.4 | 1.02 H | 111 | 11.10 | 38.50 |
| 6 | 4824.00 | 36.1 AV | 54.0 | -17.9 | 1.02 H | 111 | -2.40 | 38.50 |
| 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 | 59.2 PK | 74.0 | -14.8 | 1.05 V | 133 | 27.20 | 32.00 |
| 2 | 2390.00 | 46.0 AV | 54.0 | -8.0 | 1.05 V | 133 | 14.00 | 32.00 |
| 3 | *2412.00 | 100.5 PK | | | 1.05 V | 133 | 68.50 | 32.00 |
| 4 | *2412.00 | 90.2 AV | | | 1.05 V | 133 | 58.20 | 32.00 |
| 5 | 4824.00 | 49.2 PK | 74.0 | -24.8 | 1.04 V | 135 | 10.70 | 38.50 |
| 6 | 4824.00 | 35.8 AV | 54.0 | -18.2 | 1.04 V | 135 | -2.70 | 38.50 |

**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, 65%RH | TESTED BY | Brad Wu |

| 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 | *2437.00 | 105.3 PK | | | 1.25 H | 281 | 73.20 | 32.10 |
| 2 | *2437.00 | 95.4 AV | | | 1.25 H | 281 | 63.30 | 32.10 |
| 3 | 4874.00 | 49.8 PK | 74.0 | -24.2 | 1.05 H | 114 | 11.20 | 38.60 |
| 4 | 4874.00 | 36.4 AV | 54.0 | -17.6 | 1.05 H | 114 | -2.20 | 38.60 |
| 5 | 7311.00 | 53.6 PK | 74.0 | -20.4 | 1.04 H | 126 | 8.70 | 44.90 |
| 6 | 7311.00 | 41.1 AV | 54.0 | -12.9 | 1.04 H | 126 | -3.80 | 44.90 |
| 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 | *2437.00 | 101.6 PK | | | 1.06 V | 134 | 69.50 | 32.10 |
| 2 | *2437.00 | 91.3 AV | | | 1.06 V | 134 | 59.20 | 32.10 |
| 3 | 4874.00 | 49.5 PK | 74.0 | -24.5 | 1.06 V | 115 | 10.90 | 38.60 |
| 4 | 4874.00 | 36.0 AV | 54.0 | -18.0 | 1.06 V | 115 | -2.60 | 38.60 |
| 5 | 7311.00 | 53.2 PK | 74.0 | -20.8 | 1.11 V | 45 | 8.30 | 44.90 |
| 6 | 7311.00 | 40.9 AV | 54.0 | -13.1 | 1.11 V | 45 | -4.00 | 44.90 |

**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, 65%RH | TESTED BY | Brad Wu |

| 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 | 105.6 PK | | | 1.24 H | 285 | 73.40 | 32.20 |
| 2 | *2462.00 | 95.6 AV | | | 1.24 H | 285 | 63.40 | 32.20 |
| 3 | 2483.50 | 66.5 PK | 74.0 | -7.5 | 1.24 H | 285 | 34.20 | 32.30 |
| **4** | **2483.50** | **49.3 AV** | **54.0** | **-4.7** | **1.24 H** | **285** | **17.00** | **32.30** |
| 5 | 4924.00 | 50.2 PK | 74.0 | -23.8 | 1.04 H | 105 | 11.40 | 38.80 |
| 6 | 4924.00 | 36.5 AV | 54.0 | -17.5 | 1.04 H | 105 | -2.30 | 38.80 |
| **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 | 101.8 PK | | | 1.05 V | 130 | 69.60 | 32.20 |
| 2 | *2462.00 | 91.5 AV | | | 1.05 V | 130 | 59.30 | 32.20 |
| 3 | 2483.50 | 66.1 PK | 74.0 | -7.9 | 1.05 V | 130 | 33.80 | 32.30 |
| 4 | 2483.50 | 48.9 AV | 54.0 | -5.1 | 1.05 V | 130 | 16.60 | 32.30 |
| 5 | 4924.00 | 49.8 PK | 74.0 | -24.2 | 1.05 V | 143 | 11.00 | 38.80 |
| 6 | 4924.00 | 36.2 AV | 54.0 | -17.8 | 1.05 V | 143 | -2.60 | 38.80 |

**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.

### 802.11n (20MHz)

| 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, 65%RH | TESTED BY | Brad Wu |

| 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 | 60.0 PK | 74.0 | -14.0 | 1.27 H | 285 | 28.00 | 32.00 |
| 2 | 2390.00 | 46.8 AV | 54.0 | -7.2 | 1.27 H | 285 | 14.80 | 32.00 |
| 3 | *2412.00 | 104.0 PK | | | 1.27 H | 285 | 72.00 | 32.00 |
| 4 | *2412.00 | 94.1 AV | | | 1.27 H | 285 | 62.10 | 32.00 |
| 5 | 4824.00 | 49.4 PK | 74.0 | -24.6 | 1.05 H | 118 | 10.90 | 38.50 |
| 6 | 4824.00 | 35.8 AV | 54.0 | -18.2 | 1.05 H | 118 | -2.70 | 38.50 |
| 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 | 59.0 PK | 74.0 | -15.0 | 1.06 V | 135 | 27.00 | 32.00 |
| 2 | 2390.00 | 45.8 AV | 54.0 | -8.2 | 1.06 V | 135 | 13.80 | 32.00 |
| 3 | *2412.00 | 100.3 PK | | | 1.06 V | 135 | 68.30 | 32.00 |
| 4 | *2412.00 | 90.0 AV | | | 1.06 V | 135 | 58.00 | 32.00 |
| 5 | 4824.00 | 49.4 PK | 74.0 | -24.6 | 1.03 V | 56 | 10.90 | 38.50 |
| 6 | 4824.00 | 36.1 AV | 54.0 | -17.9 | 1.03 V | 56 | -2.40 | 38.50 |

**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, 65%RH | TESTED BY | Brad Wu |

| 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 | *2437.00 | 105.1 PK | | | 1.26 H | 283 | 73.00 | 32.10 |
| 2 | *2437.00 | 95.2 AV | | | 1.26 H | 283 | 63.10 | 32.10 |
| 3 | 4874.00 | 49.5 PK | 74.0 | -24.5 | 1.02 H | 113 | 10.90 | 38.60 |
| 4 | 4874.00 | 36.1 AV | 54.0 | -17.9 | 1.02 H | 113 | -2.50 | 38.60 |
| 5 | 7311.00 | 53.4 PK | 74.0 | -20.6 | 1.03 H | 26 | 8.50 | 44.90 |
| 6 | 7311.00 | 40.8 AV | 54.0 | -13.2 | 1.03 H | 26 | -4.10 | 44.90 |
| 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 | *2437.00 | 101.3 PK | | | 1.05 V | 136 | 69.20 | 32.10 |
| 2 | *2437.00 | 91.0 AV | | | 1.05 V | 136 | 58.90 | 32.10 |
| 3 | 4874.00 | 49.2 PK | 74.0 | -24.8 | 1.03 V | 118 | 10.60 | 38.60 |
| 4 | 4874.00 | 35.8 AV | 54.0 | -18.2 | 1.03 V | 118 | -2.80 | 38.60 |
| 5 | 7311.00 | 52.9 PK | 74.0 | -21.1 | 1.01 V | 27 | 8.00 | 44.90 |
| 6 | 7311.00 | 40.5 AV | 54.0 | -13.5 | 1.01 V | 27 | -4.40 | 44.90 |

**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, 65%RH | TESTED BY | Brad Wu |

| 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 | 105.4 PK | | | 1.28 H | 284 | 73.20 | 32.20 |
| 2 | *2462.00 | 95.3 AV | | | 1.28 H | 284 | 63.10 | 32.20 |
| 3 | 2483.50 | 66.2 PK | 74.0 | -7.8 | 1.28 H | 284 | 33.90 | 32.30 |
| 4 | 2483.50 | 49.1 AV | 54.0 | -4.9 | 1.28 H | 284 | 16.80 | 32.30 |
| 5 | 4924.00 | 50.0 PK | 74.0 | -24.0 | 1.03 H | 115 | 11.20 | 38.80 |
| 6 | 4924.00 | 36.1 AV | 54.0 | -17.9 | 1.03 H | 115 | -2.70 | 38.80 |
| 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 | 101.5 PK | | | 1.02 V | 129 | 69.30 | 32.20 |
| 2 | *2462.00 | 91.1 AV | | | 1.02 V | 129 | 58.90 | 32.20 |
| 3 | 2483.50 | 65.8 PK | 74.0 | -8.2 | 1.02 V | 129 | 33.50 | 32.30 |
| 4 | 2483.50 | 48.4 AV | 54.0 | -5.6 | 1.02 V | 129 | 16.10 | 32.30 |
| 5 | 4924.00 | 49.5 PK | 74.0 | -24.5 | 1.03 V | 136 | 10.70 | 38.80 |
| 6 | 4924.00 | 35.6 AV | 54.0 | -18.4 | 1.03 V | 136 | -3.20 | 38.80 |

**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.

## BELOW 1GHz WORST-CASE DATA：802.11b

| EUT TEST CONDITION | | MEASUREMENT DETAIL | |
|---|---|---|---|
| CHANNEL | Channel 6 | FREQUENCY RANGE | Below 1000MHz |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | DETECTOR FUNCTION | Quasi-Peak |
| ENVIRONMENTAL CONDITIONS | 25deg. C, 65%RH | TESTED BY | Brad Wu |

| 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 | 156.28 | 25.9 QP | 43.5 | -17.6 | 2.00 H | 338 | 11.20 | 14.70 |
| 2 | 234.05 | 27.9 QP | 46.0 | -18.1 | 1.25 H | 322 | 15.70 | 12.20 |
| 3 | 409.04 | 28.0 QP | 46.0 | -18.0 | 1.25 H | 124 | 10.30 | 17.70 |
| 4 | 572.36 | 27.4 QP | 46.0 | -18.6 | 1.25 H | 67 | 5.60 | 21.80 |
| 5 | 727.90 | 34.9 QP | 46.0 | -11.1 | 1.25 H | 163 | 10.50 | 24.40 |
| 6 | 830.95 | 35.2 QP | 46.0 | -10.8 | 2.00 H | 49 | 9.40 | 25.80 |
| **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 | 47.40 | 30.6 QP | 40.0 | -9.4 | 1.00 V | 10 | 16.20 | 14.40 |
| 2 | 80.45 | 31.4 QP | 40.0 | -8.6 | 1.00 V | 187 | 22.20 | 9.20 |
| 3 | 158.22 | 26.8 QP | 43.5 | -16.7 | 1.00 V | 304 | 12.10 | 14.70 |
| 4 | 624.85 | 28.9 QP | 46.0 | -17.1 | 1.50 V | 346 | 6.00 | 22.90 |
| 5 | 727.90 | 27.6 QP | 46.0 | -18.4 | 1.25 V | 154 | 3.20 | 24.40 |
| 6 | 780.40 | 28.9 QP | 46.0 | -17.1 | 2.00 V | 331 | 3.90 | 25.00 |

**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 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 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 0.50MHz.

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.

### 4.2.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|---|---|---|---|---|
| Test Receiver ROHDE & SCHWARZ | ESCS30 | 100289 | Nov. 23, 2010 | Nov. 22, 2011 |
| RF signal cable Woken | 5D-FB | Cable-HYCO2-01 | Dec. 30, 2010 | Dec. 29, 2011 |
| LISN ROHDE & SCHWARZ | ESH2-Z5 | 100100 | Jan. 06, 2011 | Jan. 05, 2012 |
| LISN ROHDE & SCHWARZ | ESH3-Z5 | 100312 | Jul. 07, 2011 | Jul. 06, 2012 |
| V-LISN SCHWARZBECK | NNBL 8226-2 | 8226-142 | Jun. 30, 2011 | Jun. 29, 2012 |
| LISN ROHDE & SCHWARZ | ENV216 | 100072 | Jun. 10, 2011 | Jun. 09, 2012 |
| Software ADT | ADT_Cond_ V7.3.7 | NA | 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 HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

### 4.2.3 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.

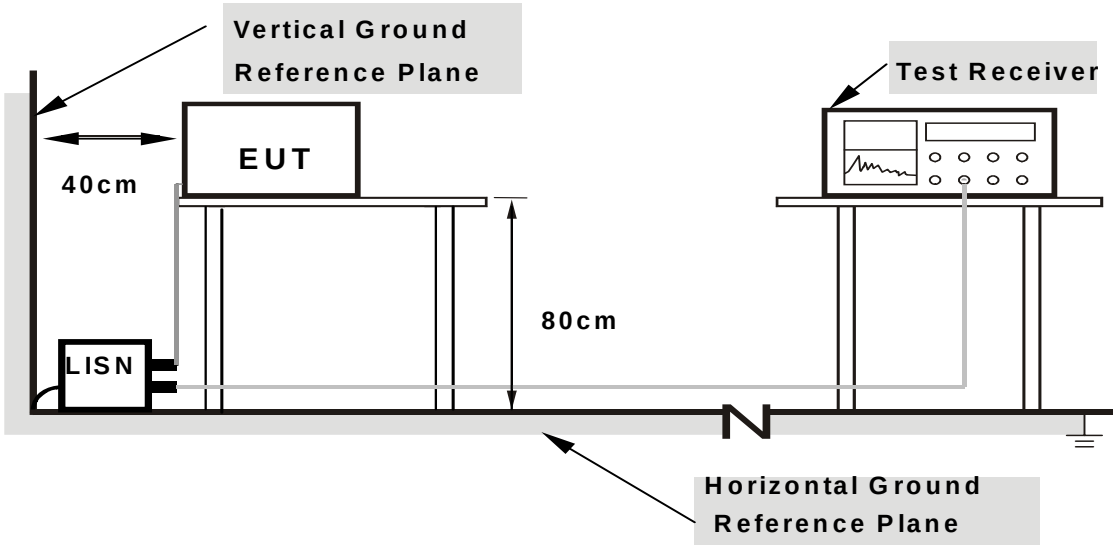
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

**NOTE:** All modes of operation were investigated and the worst-case emissions are reported.

### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

## 4.2.5 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 attached file (Test Setup Photo).

## 4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

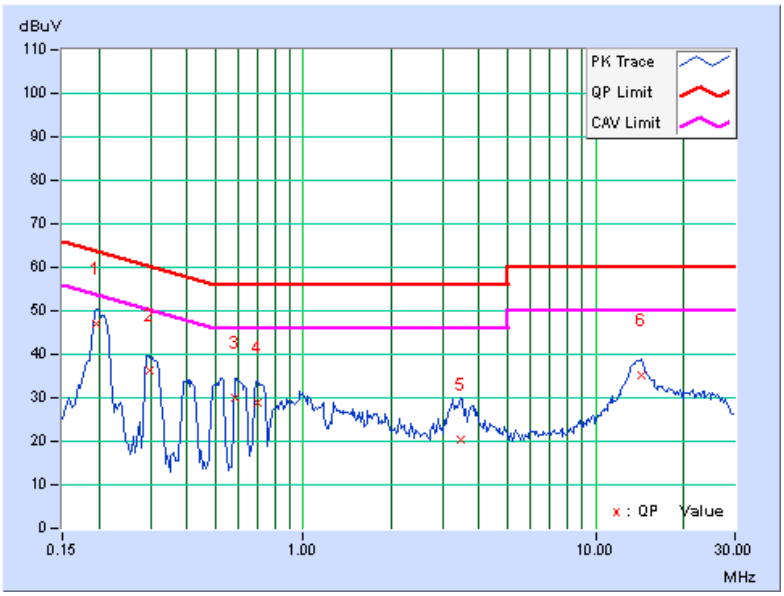
## 4.2.7 TEST RESULTS

**CONDUCTED WORST-CASE DATA：802.11b**

| PHASE | Line 1 | 6dB BANDWIDTH | 9kHz |
|---|---|---|---|

| 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 | 0.197 | 0.14 | 46.94 | - | 47.08 | - | 63.74 | 53.74 | -16.66 | - |
| 2 | 0.298 | 0.19 | 36.05 | - | 36.24 | - | 60.29 | 50.29 | -24.04 | - |
| 3 | 0.584 | 0.23 | 29.71 | - | 29.94 | - | 56.00 | 46.00 | -26.06 | - |
| 4 | 0.697 | 0.23 | 28.67 | - | 28.90 | - | 56.00 | 46.00 | -27.10 | - |
| 5 | 3.453 | 0.35 | 19.84 | - | 20.19 | - | 56.00 | 46.00 | -35.81 | - |
| 6 | 14.340 | 0.92 | 34.17 | - | 35.09 | - | 60.00 | 50.00 | -24.91 | - |

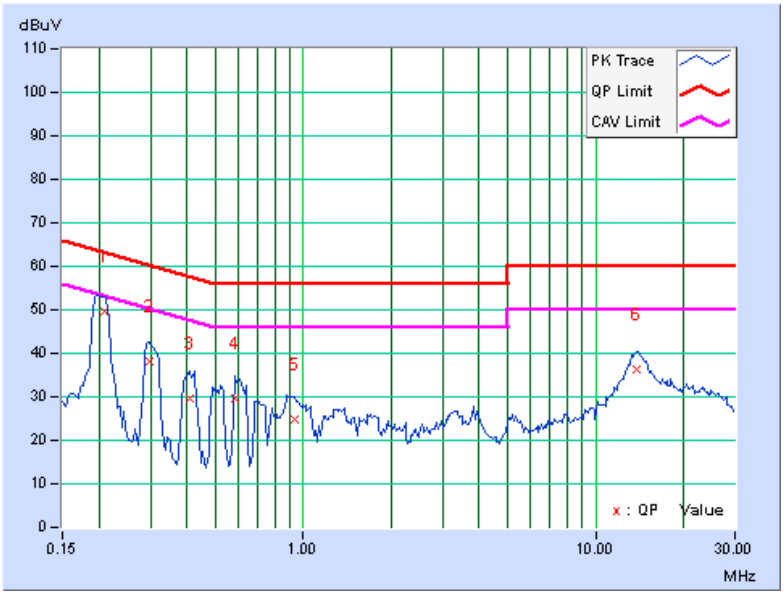
**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value =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



| PHASE | Line 2 | 6dB BANDWIDTH | 9kHz |
|---|---|---|---|

| | Freq. | Corr. | Reading Value | | Emission Level | | Limit | | Margin | |
|---|---|---|---|---|---|---|---|---|---|---|
| No | | Factor | [dB (uV)] | | [dB (uV)] | | [dB (uV)] | | (dB) | |
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| **1** | **0.209** | **0.21** | **49.31** | **-** | **49.52** | **-** | **63.26** | **53.26** | **-13.74** | **-** |
| 2 | 0.298 | 0.22 | 38.11 | - | 38.33 | - | 60.29 | 50.29 | -21.96 | - |
| 3 | 0.408 | 0.23 | 29.31 | - | 29.54 | - | 57.69 | 47.69 | -28.15 | - |
| 4 | 0.584 | 0.24 | 29.35 | - | 29.59 | - | 56.00 | 46.00 | -26.41 | - |
| 5 | 0.939 | 0.27 | 24.37 | - | 24.64 | - | 56.00 | 46.00 | -31.36 | - |
| 6 | 13.859 | 0.81 | 35.66 | - | 36.47 | - | 60.00 | 50.00 | -23.53 | - |

**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.



## 4.3 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. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|---|---|---|---|---|
| SPECTRUM ANALYZER R&S | FSP40 | 100039 | Feb. 23, 2011 | Feb. 22, 2012 |

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

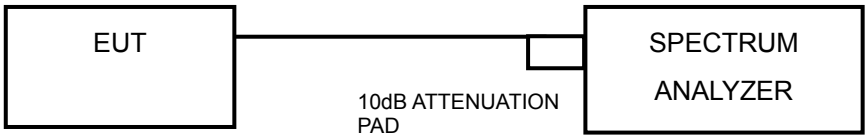
### 4.3.3 TEST PROCEDURE

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 300kHz 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

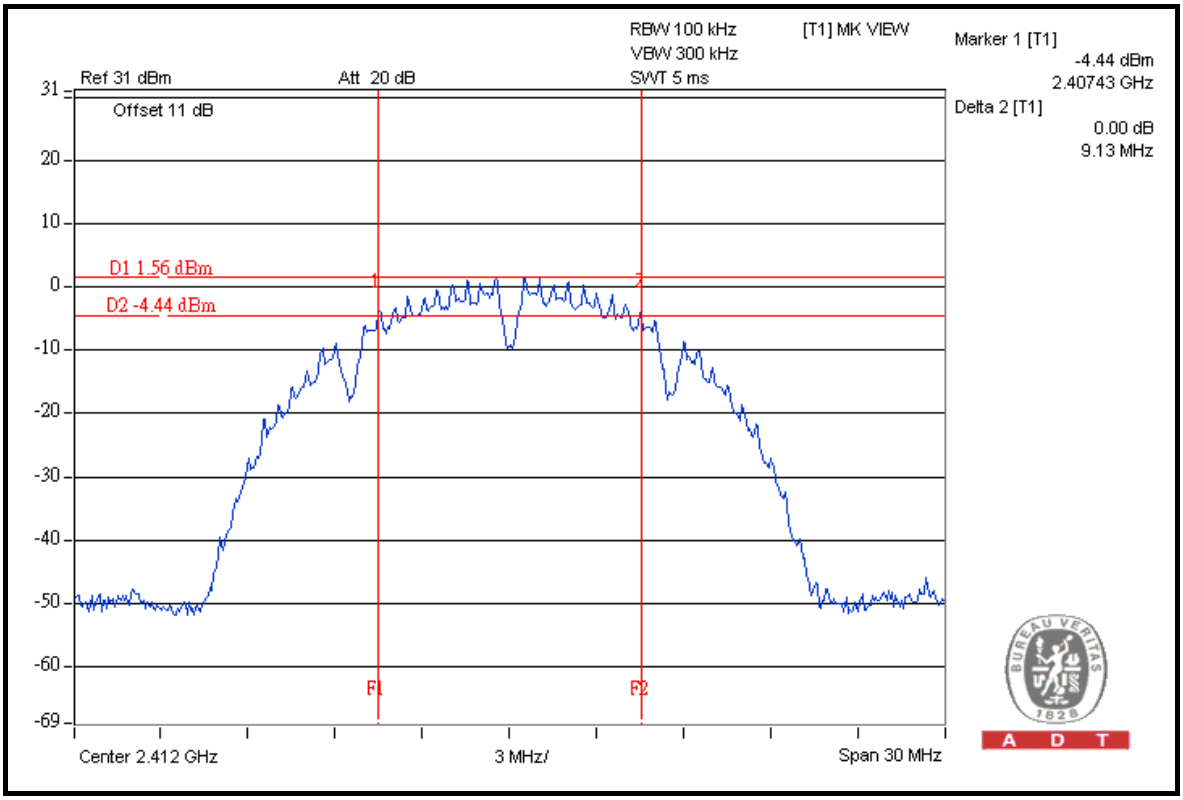
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

## 4.3.7 TEST RESULTS

**802.11b**

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---|---|---|---|---|
| 1 | 2412 | 9.13 | 0.5 | PASS |
| 6 | 2437 | 9.08 | 0.5 | PASS |
| 11 | 2462 | 9.03 | 0.5 | PASS |

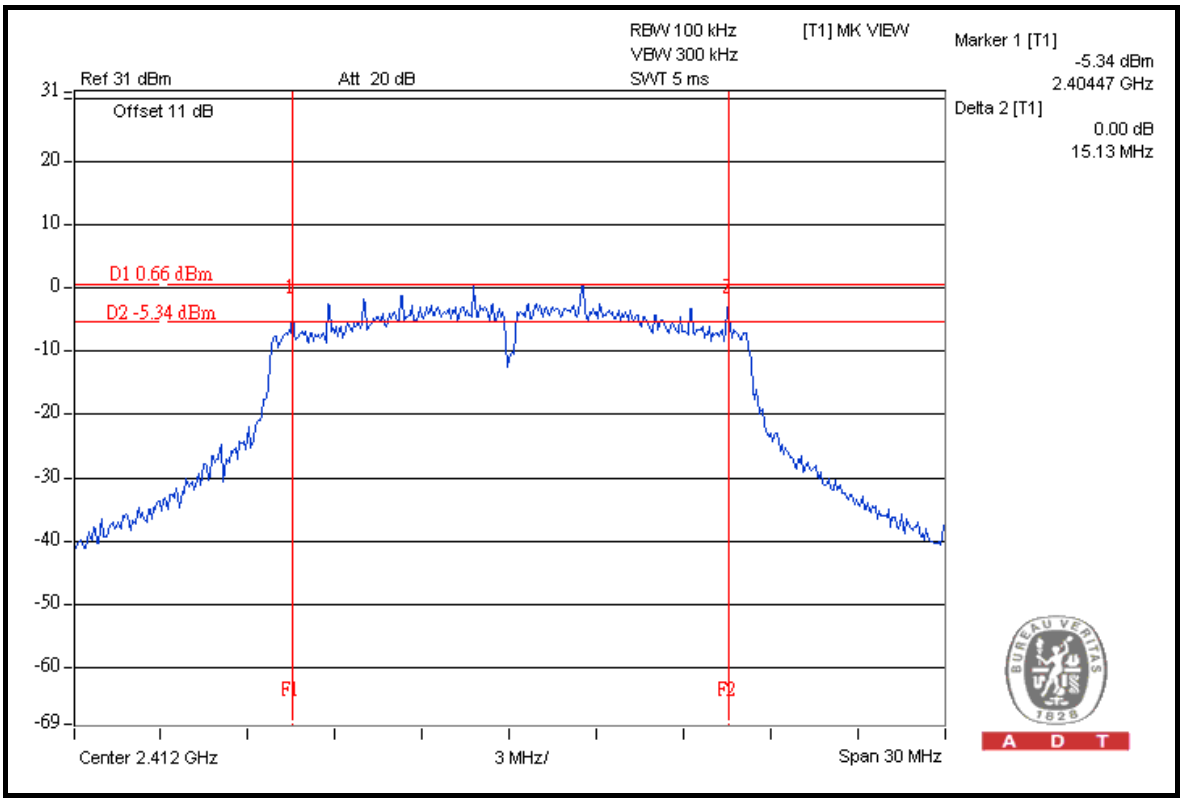
**CH 1**



## 802.11g

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---|---|---|---|---|
| 1 | 2412 | 15.13 | 0.5 | PASS |
| 6 | 2437 | 13.82 | 0.5 | PASS |
| 11 | 2462 | 13.93 | 0.5 | PASS |

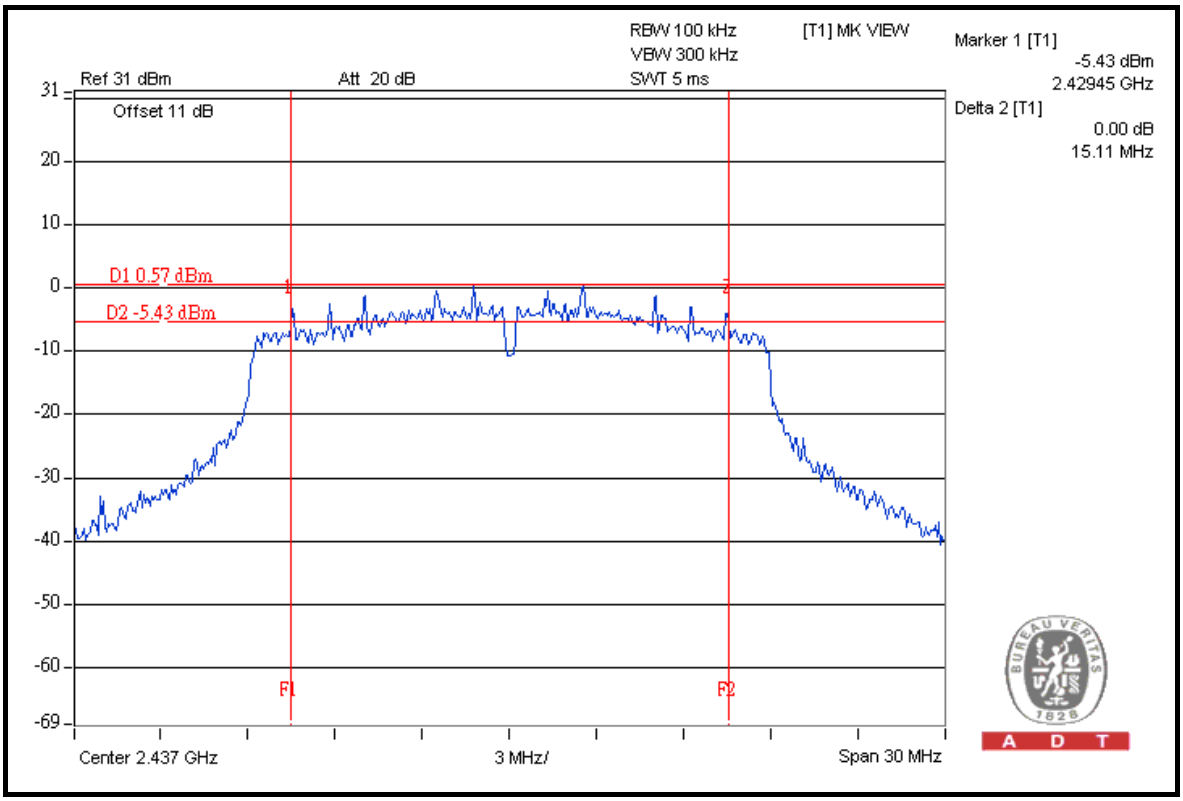
## CH 1



## 802.11n (20MHz)

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---|---|---|---|---|
| 1 | 2412 | 13.85 | 0.5 | PASS |
| 6 | 2437 | 15.11 | 0.5 | PASS |
| 11 | 2462 | 13.88 | 0.5 | PASS |

## CH 6



## 4.4 MAXIMUM OUTPUT POWER

### 4.4.1 LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT

The Maximum Output Power Measurement is 30dBm.

### 4.4.2 INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|---|---|---|---|---|
| SPECTRUM ANALYZER R&S | FSP40 | 100039 | Feb. 23, 2011 | Feb. 22, 2012 |

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

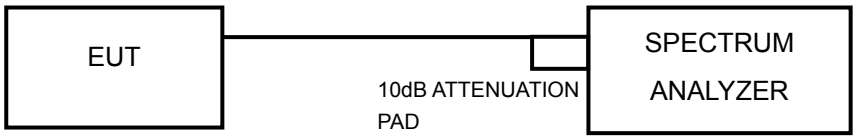
### 4.4.3 TEST PROCEDURES

1. Follow DTS measurement (Power Output Option 2), the transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth (EBW) of the signal.
3. Set RBW = 1 MHz ;VBW ≧3 MHz.
4. Use sample detector mode and video trigger with the trigger level set to enable triggering only on full power pulses.
5. Trace average 100 traces in power averaging mode.
6. Compute power by integrating the spectrum across the 26 dB EBW of the signal.
7. Record the power level.

### 4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

### 4.4.5 TEST SETUP




### 4.4.6 EUT OPERATING CONDITIONS

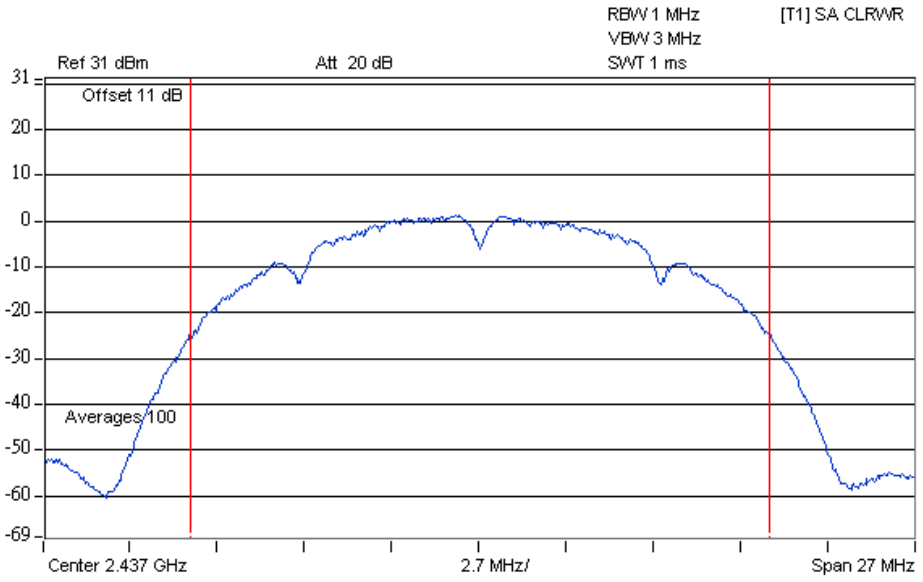
Same as Item 4.3.6.

## 4.4.7 TEST RESULTS

**FOR POWER OUTPUT MEASUREMENT: 802.11b**

| CHANNEL | CHANNEL FREQUENCY (MHz) | POWER OUTPUT (mW) | POWER OUTPUT (dBm) | POWER LIMIT (dBm) | PASS/FAIL |
|---|---|---|---|---|---|
| 1 | 2412 | 10.5 | 10.22 | 30 | PASS |
| 6 | 2437 | 11.0 | 10.42 | 30 | PASS |
| 11 | 2462 | 11.0 | 10.42 | 30 | PASS |

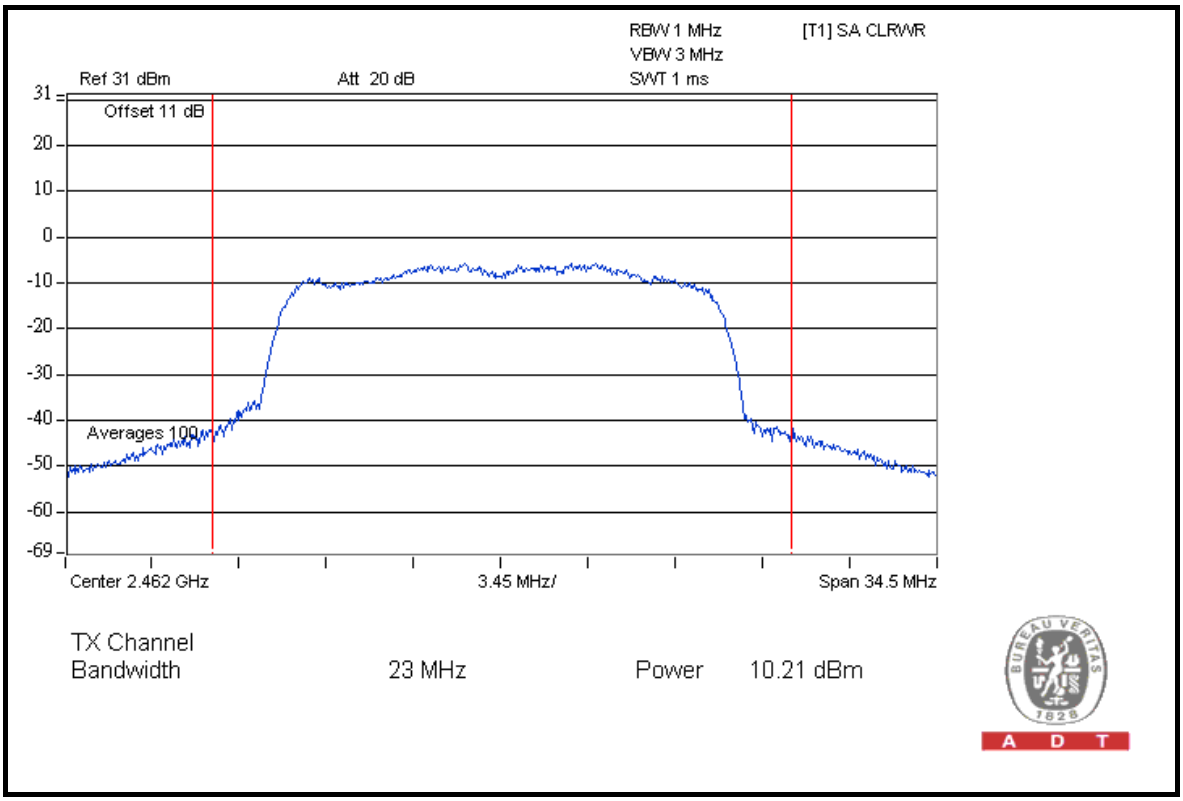
**CH 6**



## 802.11g

| CHANNEL | CHANNEL FREQUENCY (MHz) | POWER OUTPUT (mW) | POWER OUTPUT (dBm) | POWER LIMIT (dBm) | PASS/FAIL |
|---|---|---|---|---|---|
| 1 | 2412 | 10.5 | 10.21 | 30 | PASS |
| 6 | 2437 | 10.2 | 10.05 | 30 | PASS |
| 11 | 2462 | 10.5 | 10.21 | 30 | PASS |

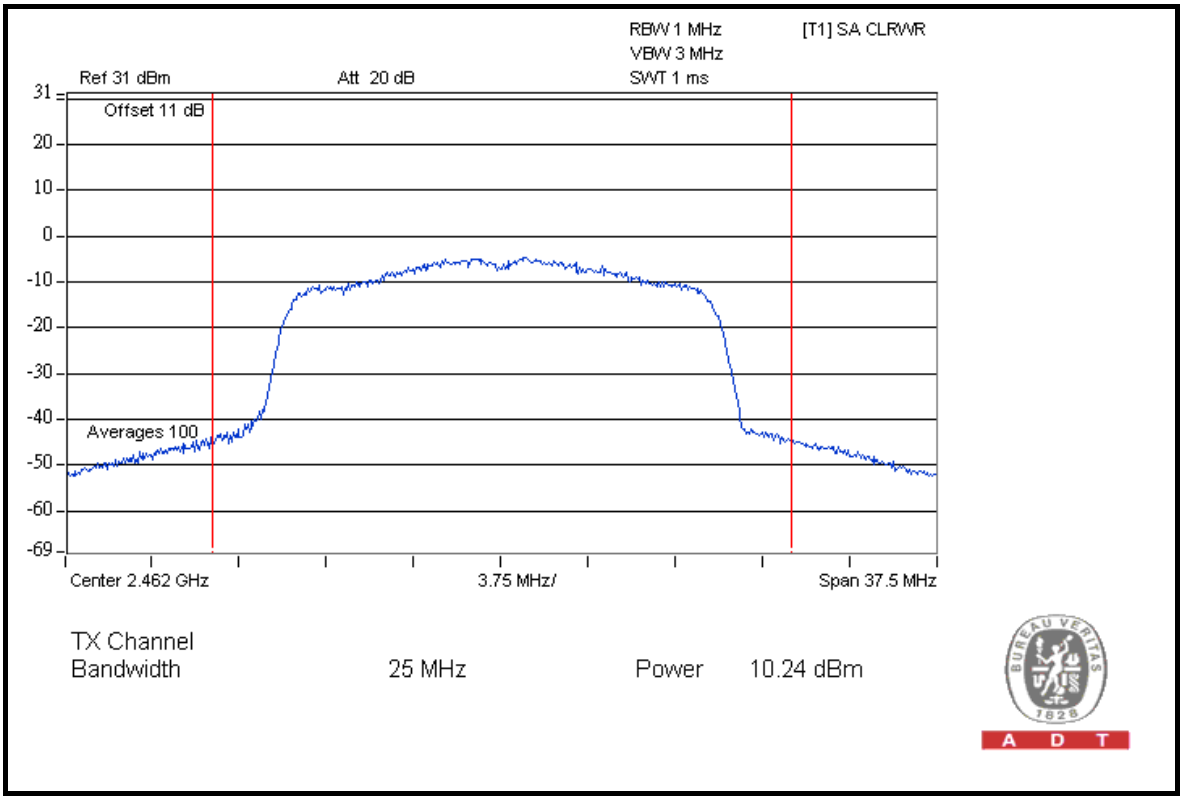
## CH 11



### 802.11n (20MHz)

| CHANNEL | CHANNEL FREQUENCY (MHz) | POWER OUTPUT (mW) | POWER OUTPUT (dBm) | POWER LIMIT (dBm) | PASS/FAIL |
|---|---|---|---|---|---|
| 1 | 2412 | 10.5 | 10.22 | 30 | PASS |
| 6 | 2437 | 10.4 | 10.17 | 30 | PASS |
| 11 | 2462 | 10.6 | 10.24 | 30 | PASS |

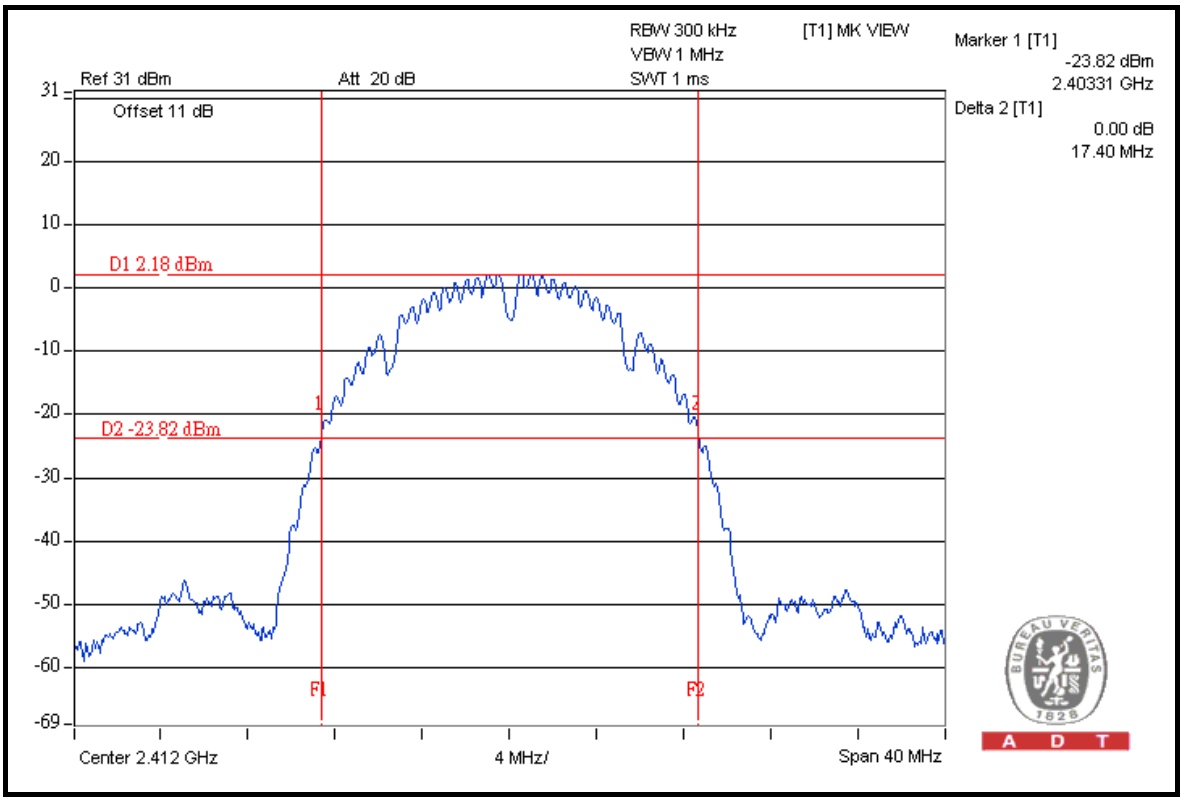
### CH 11



## 26dB OCCUPIED BANDWIDTH: 802.11b

| CHANNEL | CHANNEL FREQUENCY (MHz) | 26dBc OCCUPIED BANDWIDTH (MHz) | PASS / FAIL |
|---|---|---|---|
| 1 | 2412 | 17.40 | PASS |
| 6 | 2437 | 17.39 | PASS |
| 11 | 2462 | 17.39 | PASS |

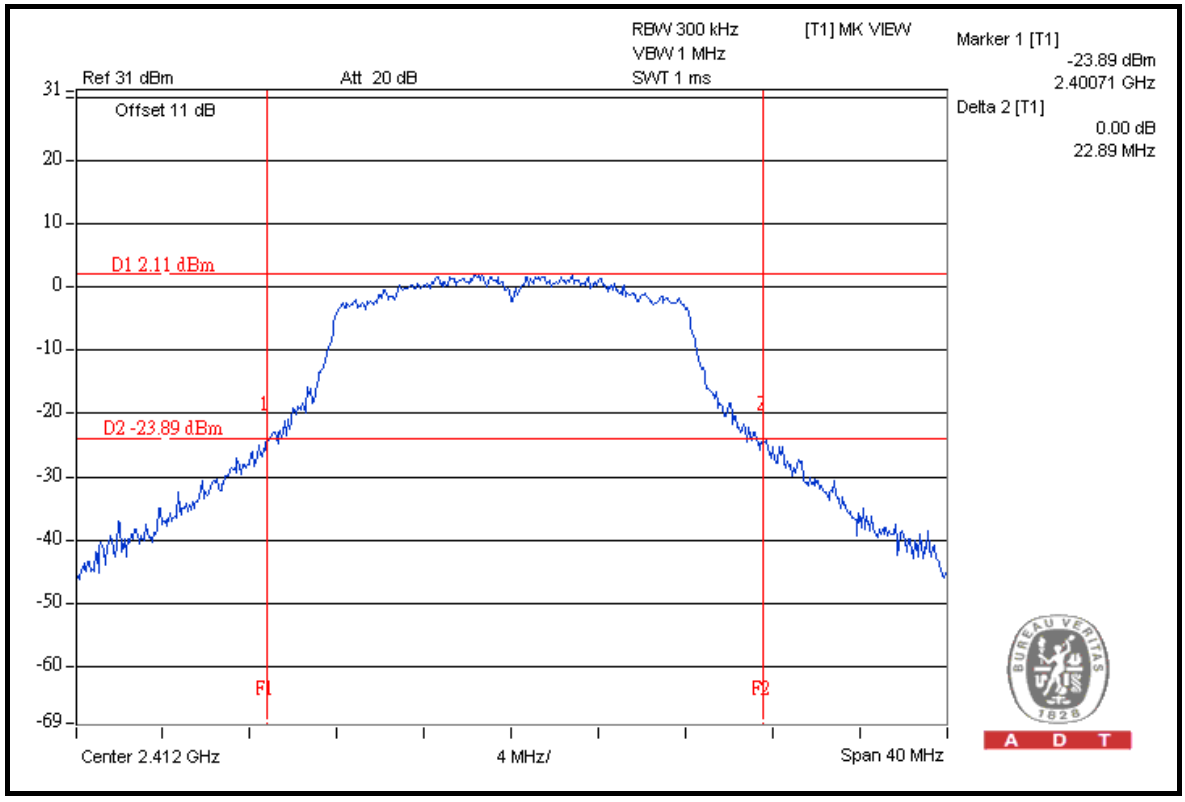
## CH 1



## 802.11g

| CHANNEL | CHANNEL FREQUENCY (MHz) | 26dBc OCCUPIED BANDWIDTH (MHz) | PASS / FAIL |
|---|---|---|---|
| 1 | 2412 | 22.89 | PASS |
| 6 | 2437 | 22.42 | PASS |
| 11 | 2462 | 22.06 | PASS |

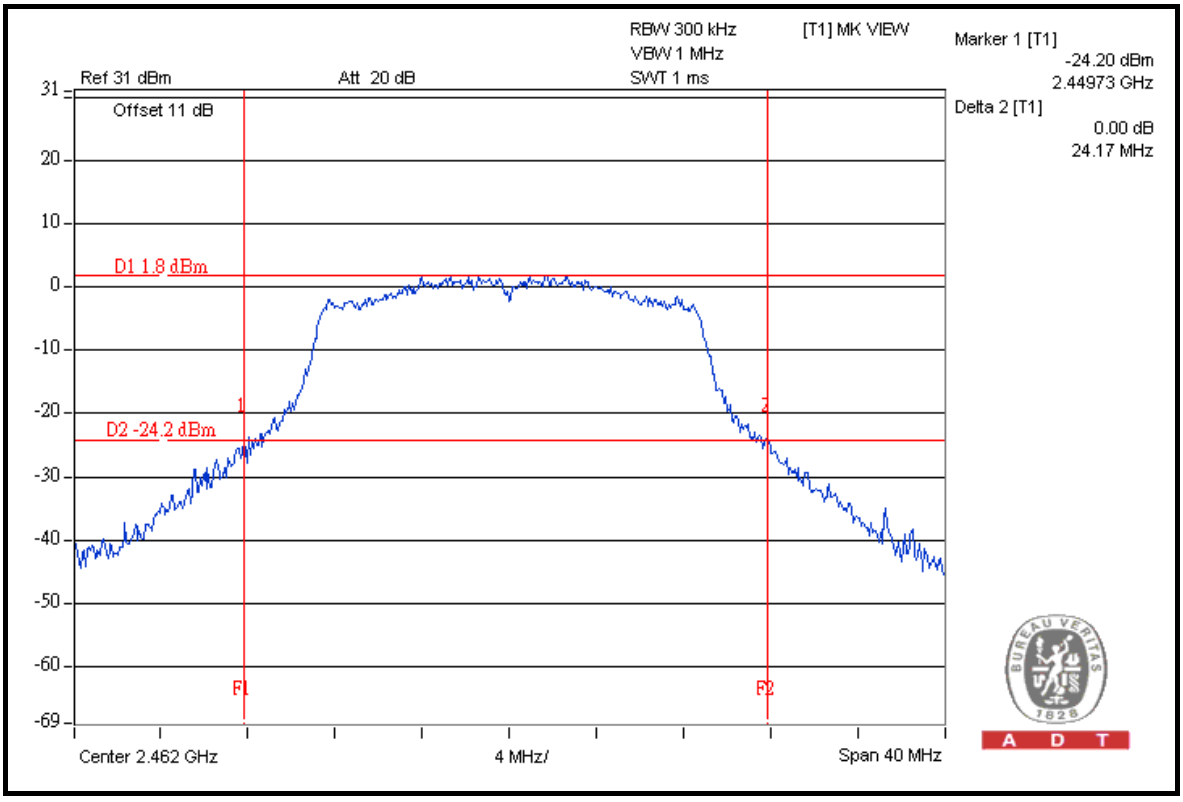
## CH 1



## 802.11n (20MHz)

| CHANNEL | CHANNEL FREQUENCY (MHz) | 26dBc OCCUPIED BANDWIDTH (MHz) | PASS / FAIL |
|---|---|---|---|
| 1 | 2412 | 22.67 | PASS |
| 6 | 2437 | 23.04 | PASS |
| 11 | 2462 | 24.17 | PASS |

## CH 11



## 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. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|---|---|---|---|---|
| SPECTRUM ANALYZER R&S | FSP40 | 100039 | Feb. 23, 2011 | Feb. 22, 2012 |

**NOTE:** 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

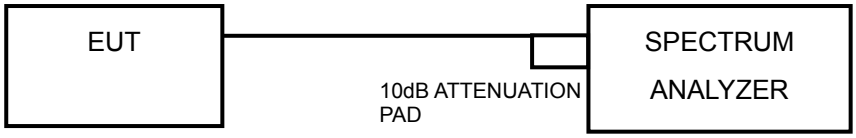
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 10kHz VBW, set sweep time = Auto , detector type =Peak . Trace average 100 traces in power averaging mode. The power spectral density was measured and recorded.

(Refer to PSD option2 of Measurement of Digital Transmission Systems Operating under Section 15.247)

## 4.5.4 DEVIATION FROM TEST STANDARD

No deviation.

## 4.5.5 TEST SETUP




## 4.5.6 EUT OPERATING CONDITION

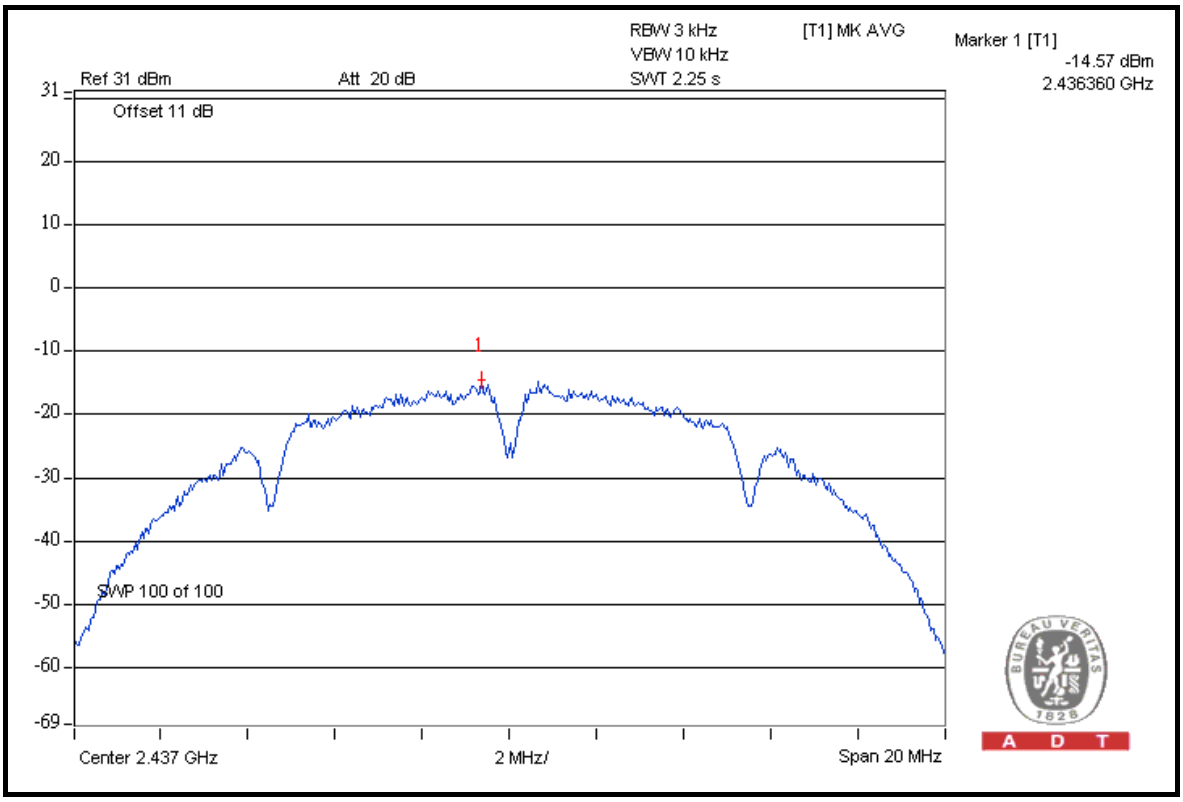
Same as Item 4.3.6

## 4.5.7 TEST RESULTS

**802.11b**

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3 kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---|---|---|---|---|
| 1 | 2412 | -15.2 | 8 | PASS |
| 6 | 2437 | -14.6 | 8 | PASS |
| 11 | 2462 | -14.6 | 8 | PASS |

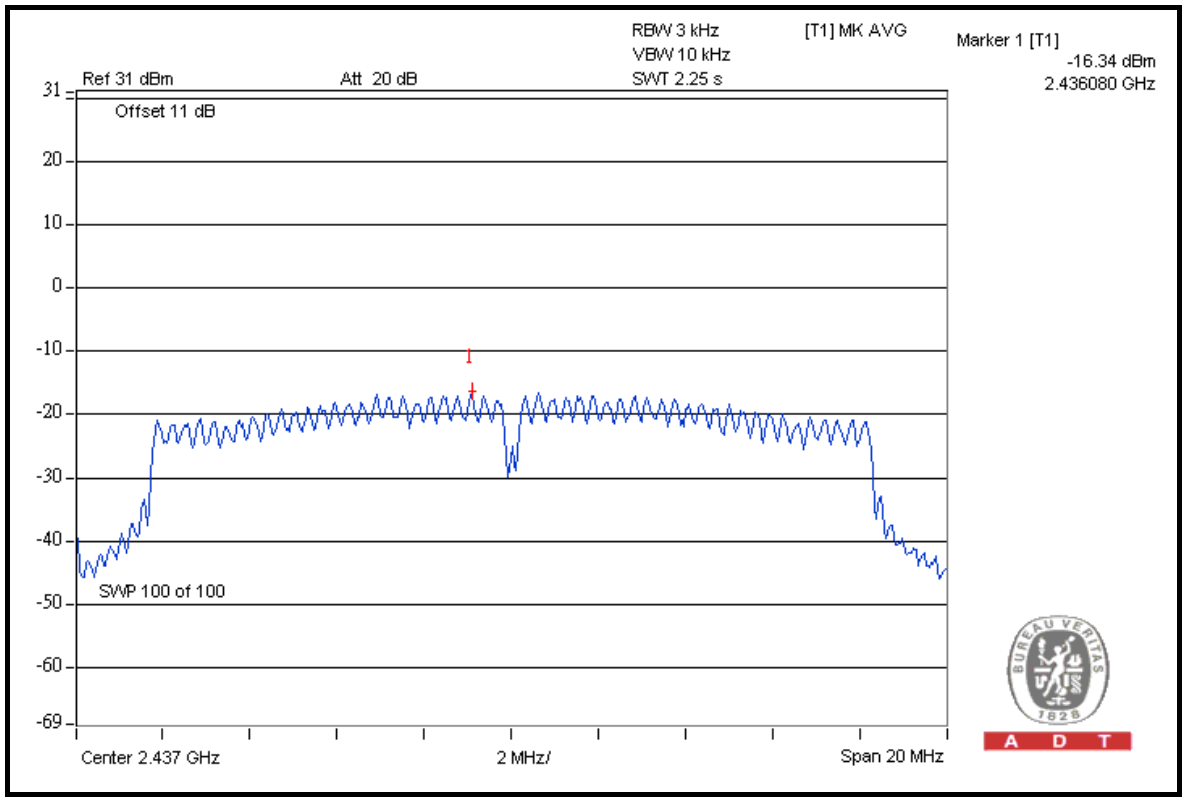
**CH 6**



## 802.11g

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3 kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---|---|---|---|---|
| 1 | 2412 | -16.5 | 8 | PASS |
| 6 | 2437 | -16.3 | 8 | PASS |
| 11 | 2462 | -16.9 | 8 | PASS |

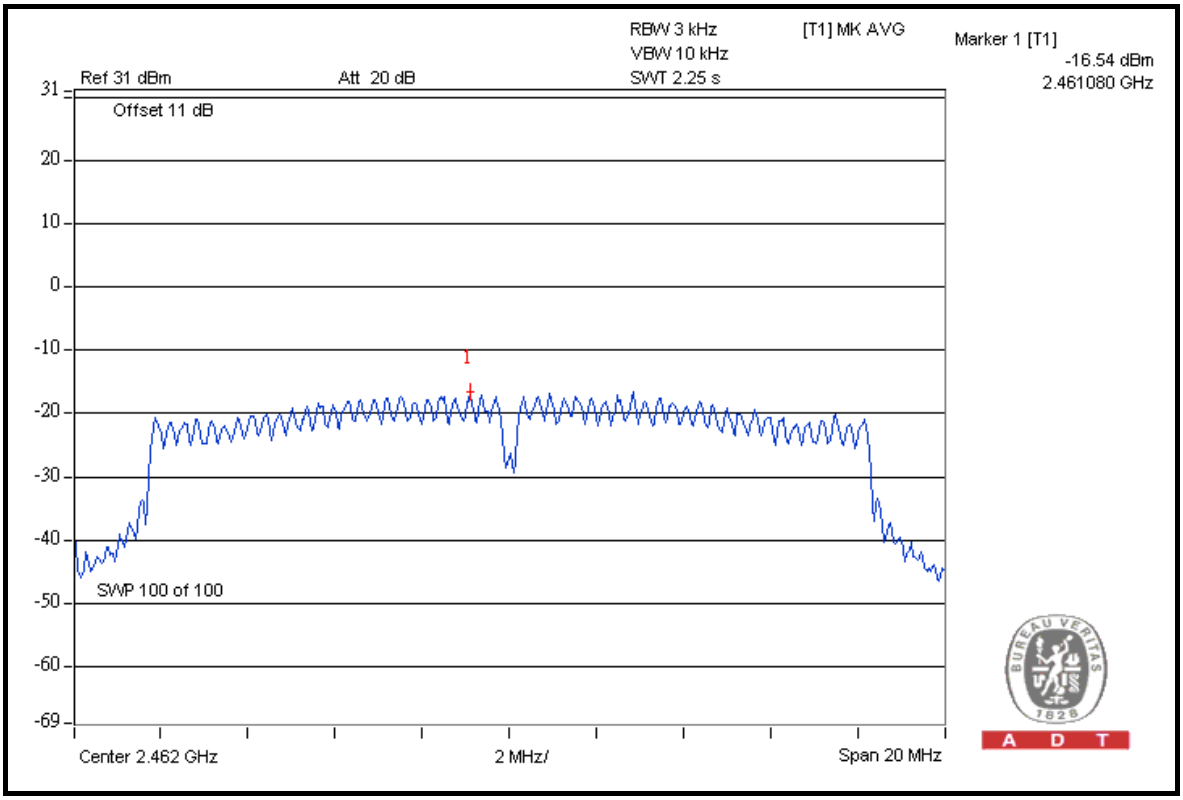
## CH 1



### 802.11n (20MHz)

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3 kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---|---|---|---|---|
| 1 | 2412 | -17.1 | 8 | PASS |
| 6 | 2437 | -16.7 | 8 | PASS |
| 11 | 2462 | -16.5 | 8 | PASS |

### CH 11



## 4.6 BAND EDGES MEASUREMENT

### 4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below –30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 4.6.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|---|---|---|---|---|
| SPECTRUM ANALYZER R&S | FSP40 | 100039 | Feb. 23, 2011 | Feb. 22, 2012 |

**NOTE:** 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 lose cable. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 300kMHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW =100kHz, VBW = 300kHz; Average RBW = 1MHz, VBW = 10Hz) 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 pages. 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**

**RESTRICT BAND (2310 ~ 2390 MHz)**

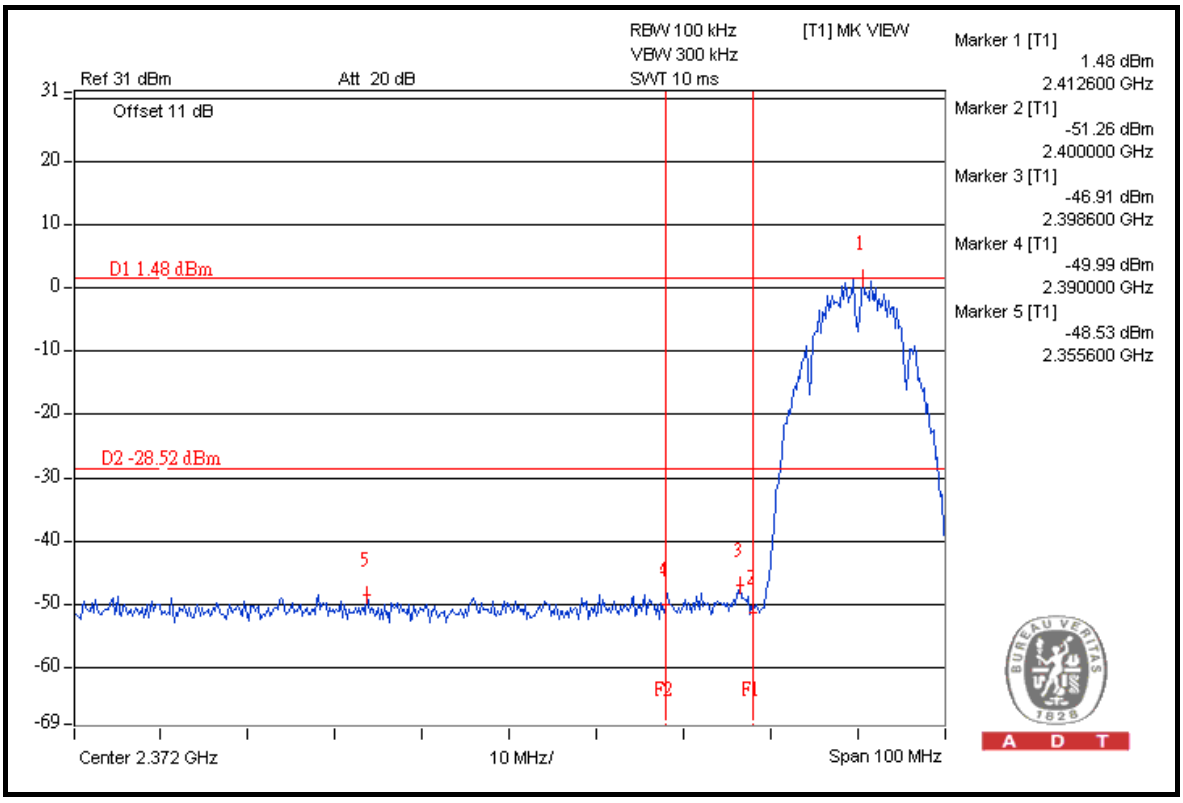
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|---|---|---|---|---|
| 2412.00 (PK) | 101.1 | 50.01 | 51.09 | 74.00 |
| 2412.00 (AV) | 96.2 | 58.21 | 37.99 | 54.00 |

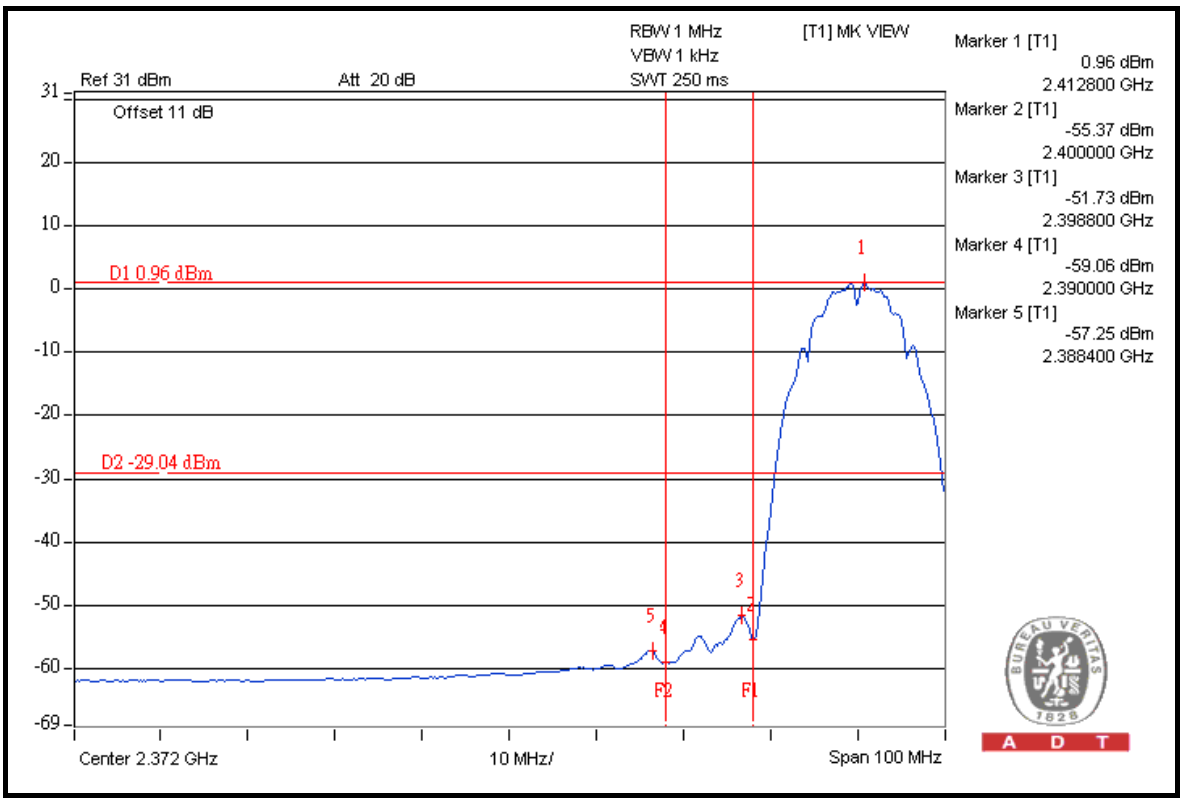
**RESTRICT BAND (2483.5 ~ 2500 MHz)**

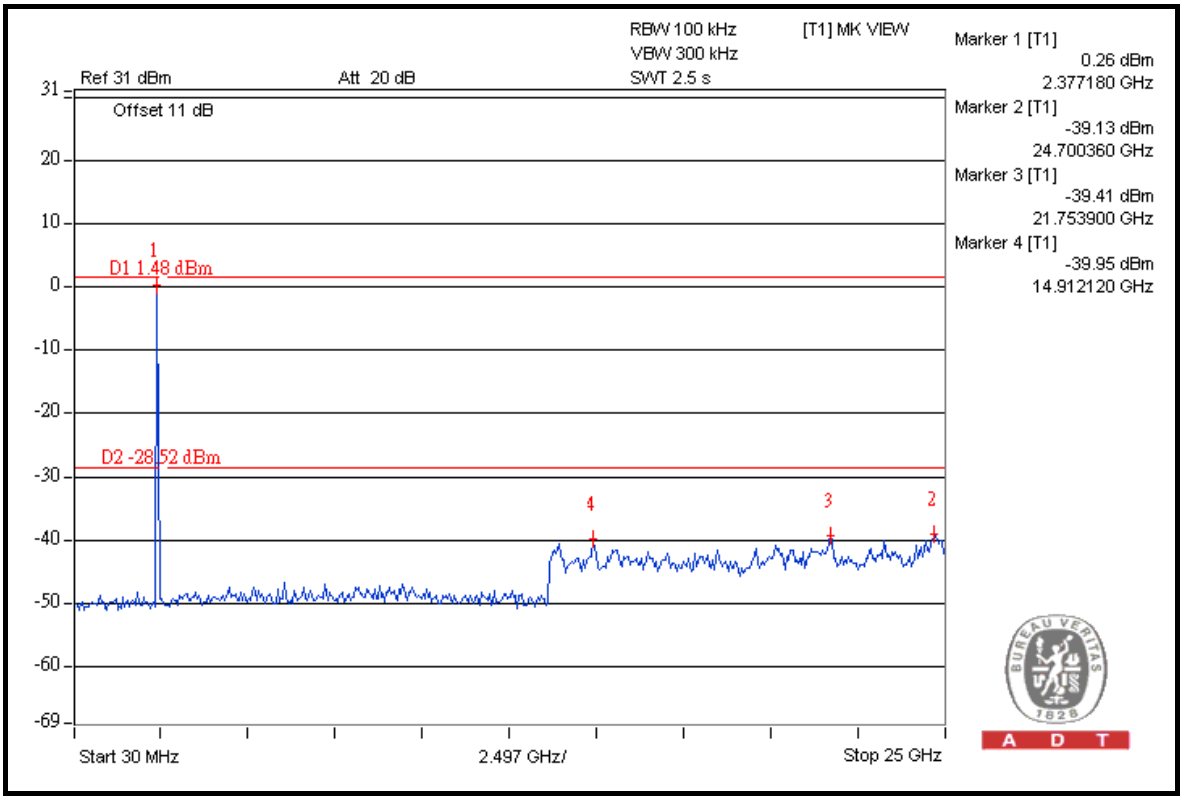
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|---|---|---|---|---|
| 2462.00 (PK) | 103.1 | 50.83 | 52.27 | 74.00 |
| 2462.00 (AV) | 98.0 | 61.93 | 36.07 | 54.00 |

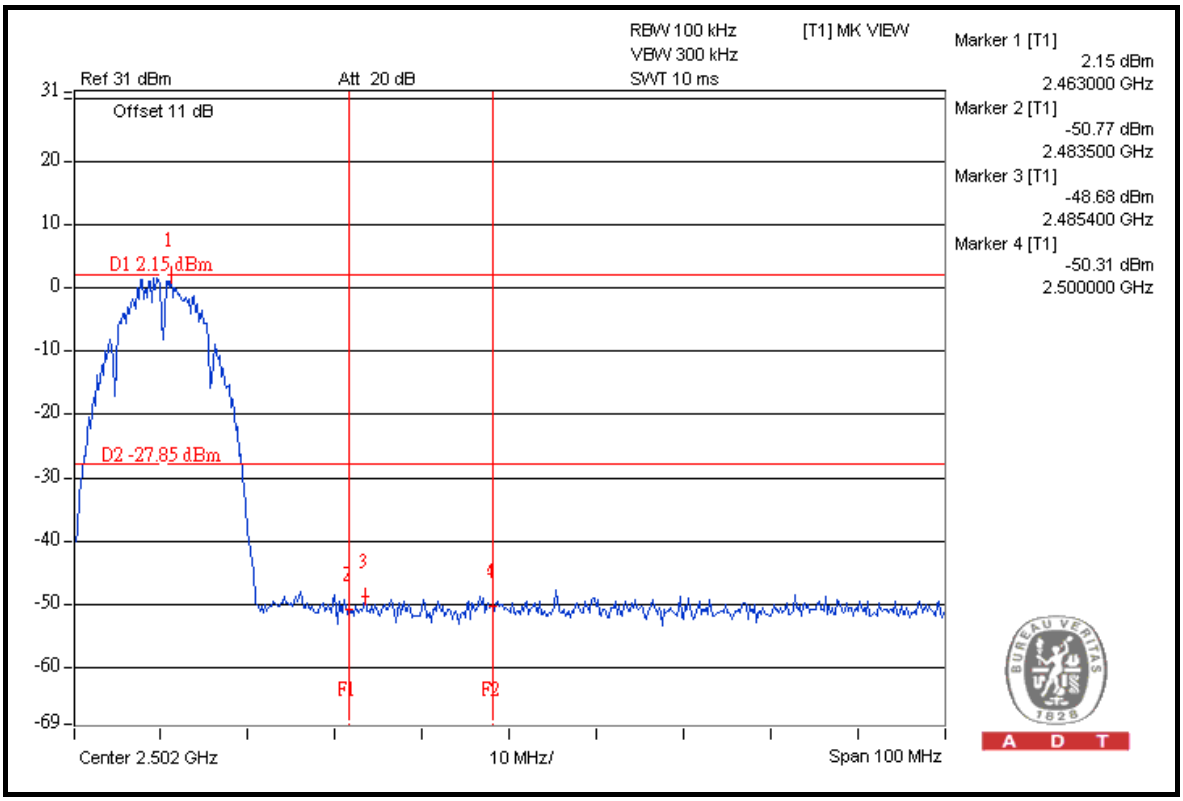
**NOTE:**

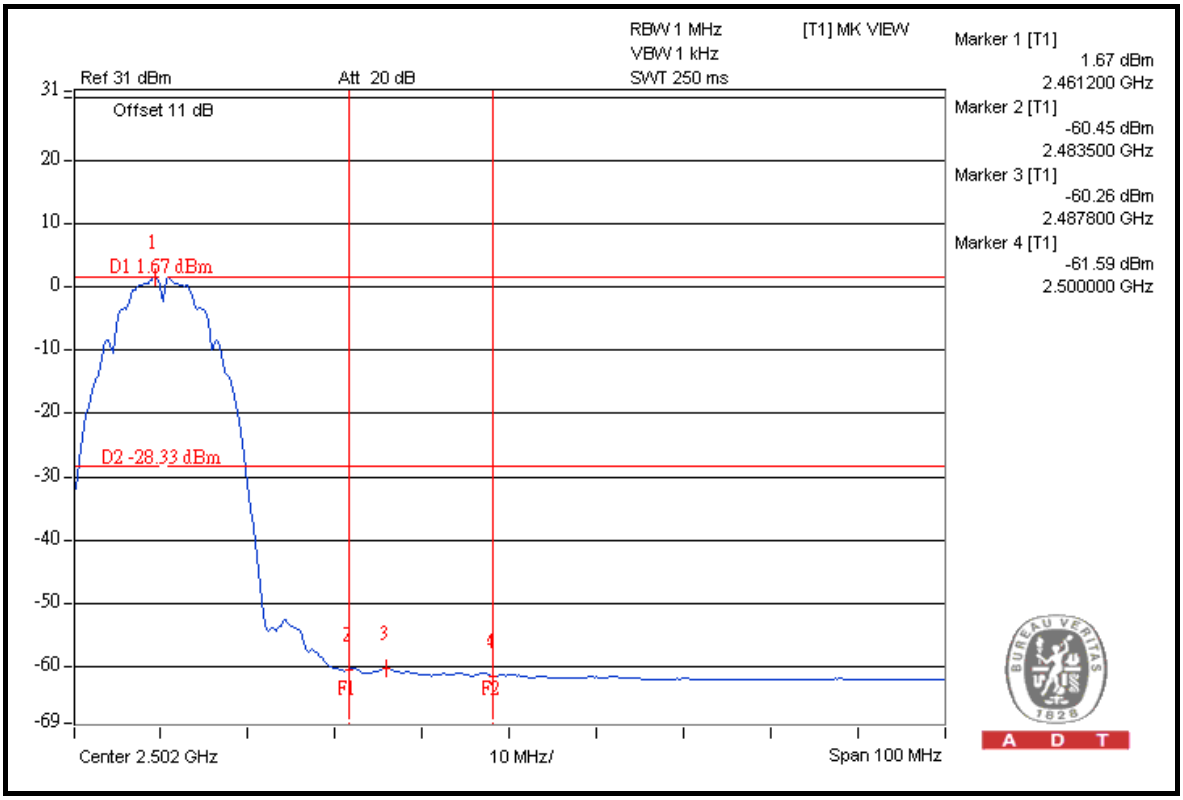
1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 3 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.

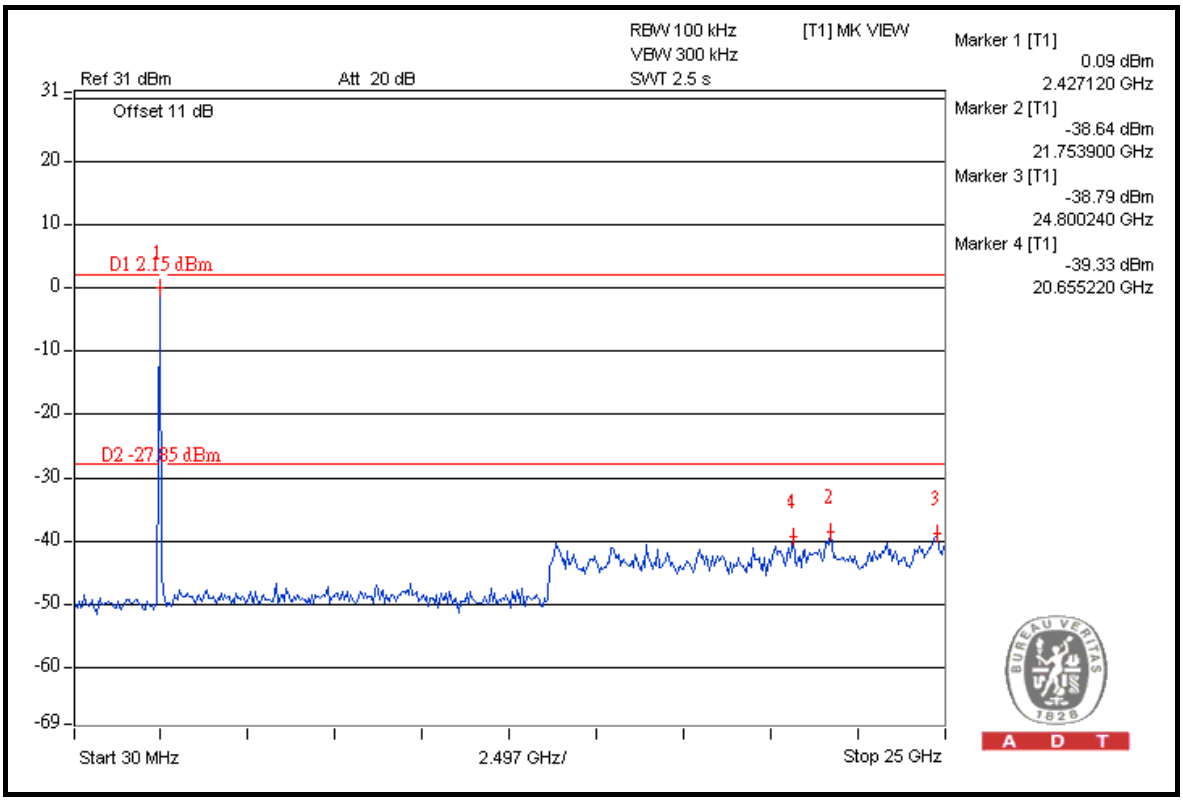

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 1.48 dBm
D2 -28.52 dBm
Marker 1 [T1]
1.48 dBm
2.412600 GHz
Marker 2 [T1]
-51.26 dBm
2.400000 GHz
Marker 3 [T1]
-46.91 dBm
2.398600 GHz
Marker 4 [T1]
-49.99 dBm
2.390000 GHz
Marker 5 [T1]
-48.53 dBm
2.355600 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 1 kHz
SWT 250 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 0.96 dBm
D2 -29.04 dBm
Marker 1 [T1]
0.96 dBm
2.412800 GHz
Marker 2 [T1]
-55.37 dBm
2.400000 GHz
Marker 3 [T1]
-51.73 dBm
2.398800 GHz
Marker 4 [T1]
-59.06 dBm
2.390000 GHz
Marker 5 [T1]
-57.25 dBm
2.388400 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 1.48 dBm
D2 -28.52 dBm
Marker 1 [T1]
0.26 dBm
2.377180 GHz
Marker 2 [T1]
-39.13 dBm
24.700360 GHz
Marker 3 [T1]
-39.41 dBm
21.753900 GHz
Marker 4 [T1]
-39.95 dBm
14.912120 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 2.15 dBm
D2 -27.85 dBm
Marker 1 [T1]
2.15 dBm
2.463000 GHz
Marker 2 [T1]
-50.77 dBm
2.483500 GHz
Marker 3 [T1]
-48.68 dBm
2.485400 GHz
Marker 4 [T1]
-50.31 dBm
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 1 kHz
SWT 250 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 1.67 dBm
D2 -28.33 dBm
Marker 1 [T1]
1.67 dBm
2.461200 GHz
Marker 2 [T1]
-60.45 dBm
2.483500 GHz
Marker 3 [T1]
-60.26 dBm
2.487800 GHz
Marker 4 [T1]
-61.59 dBm
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 2.15 dBm
D2 -27.85 dBm
Marker 1 [T1]
0.09 dBm
2.427120 GHz
Marker 2 [T1]
-38.64 dBm
21.753900 GHz
Marker 3 [T1]
-38.79 dBm
24.800240 GHz
Marker 4 [T1]
-39.33 dBm
20.655220 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

## 802.11g

**RESTRICT BAND (2310 ~ 2390 MHz)**

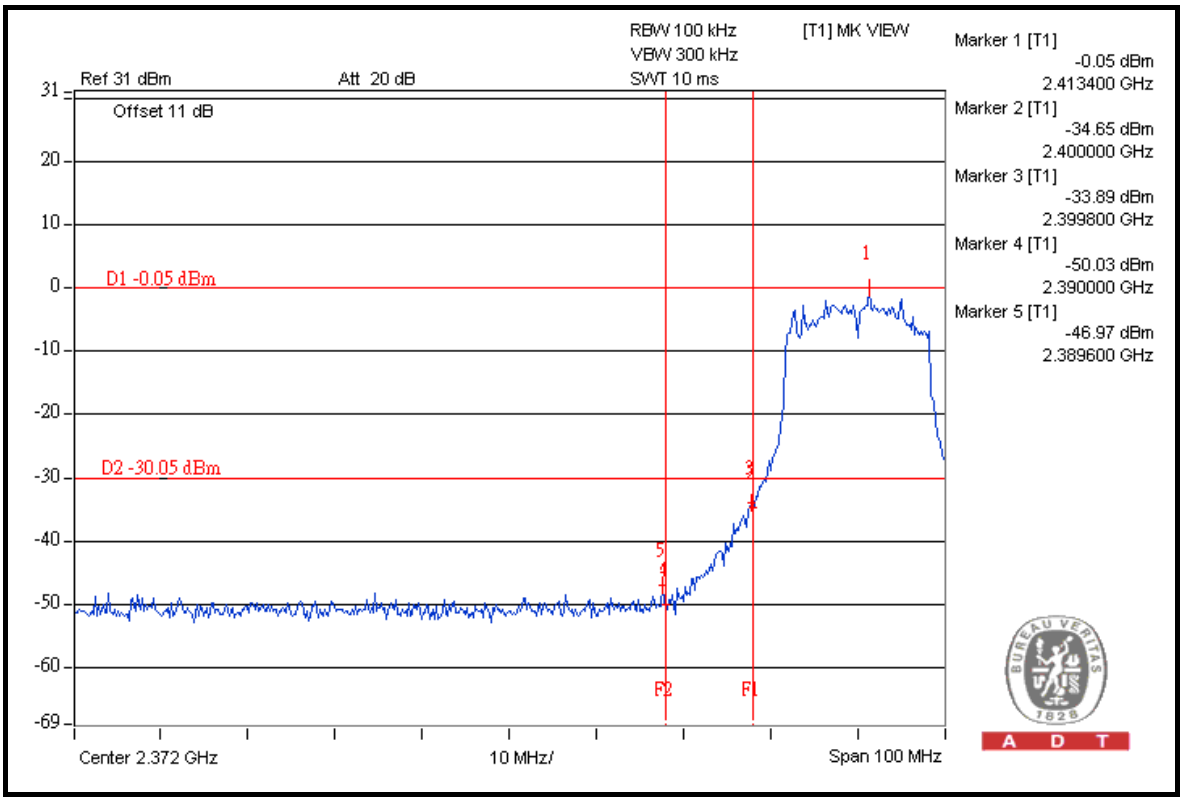
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|---|---|---|---|---|
| 2412.00 (PK) | 104.2 | 46.92 | 57.28 | 74.00 |
| 2412.00 (AV) | 94.5 | 53.85 | 40.65 | 54.00 |

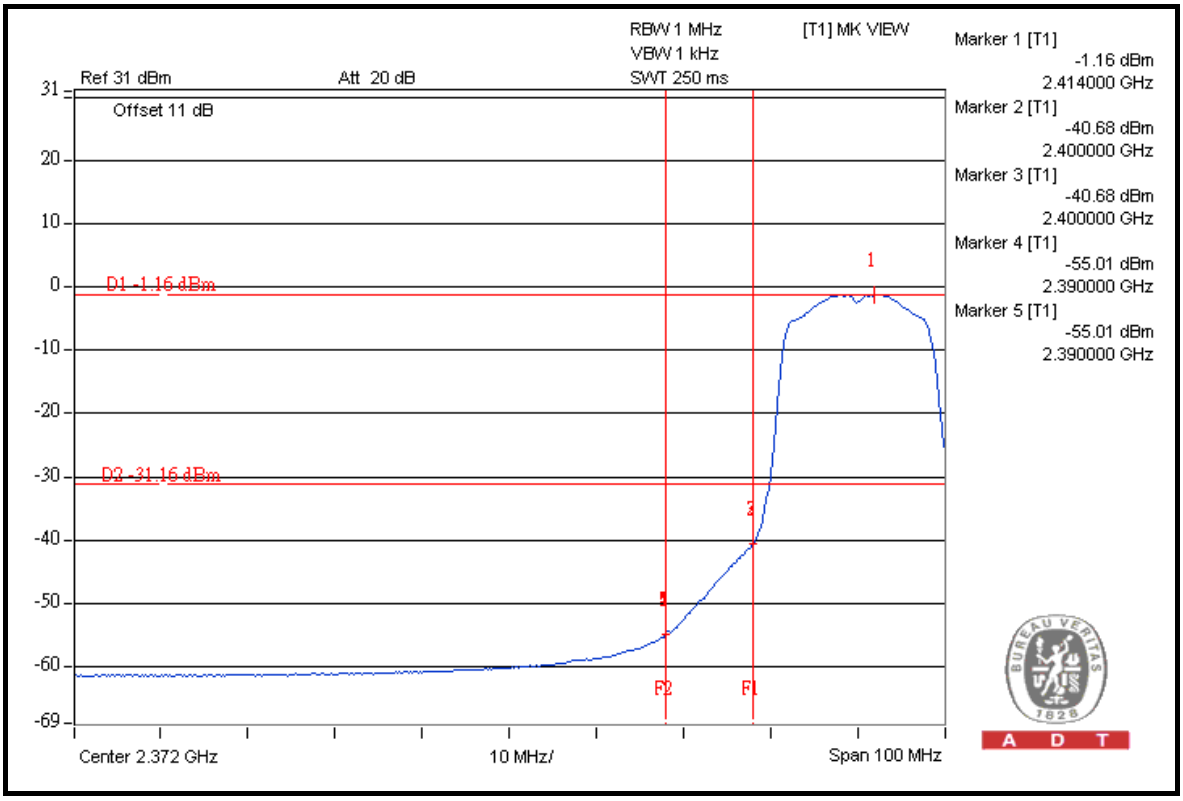
**RESTRICT BAND (2483.5 ~ 2500 MHz)**

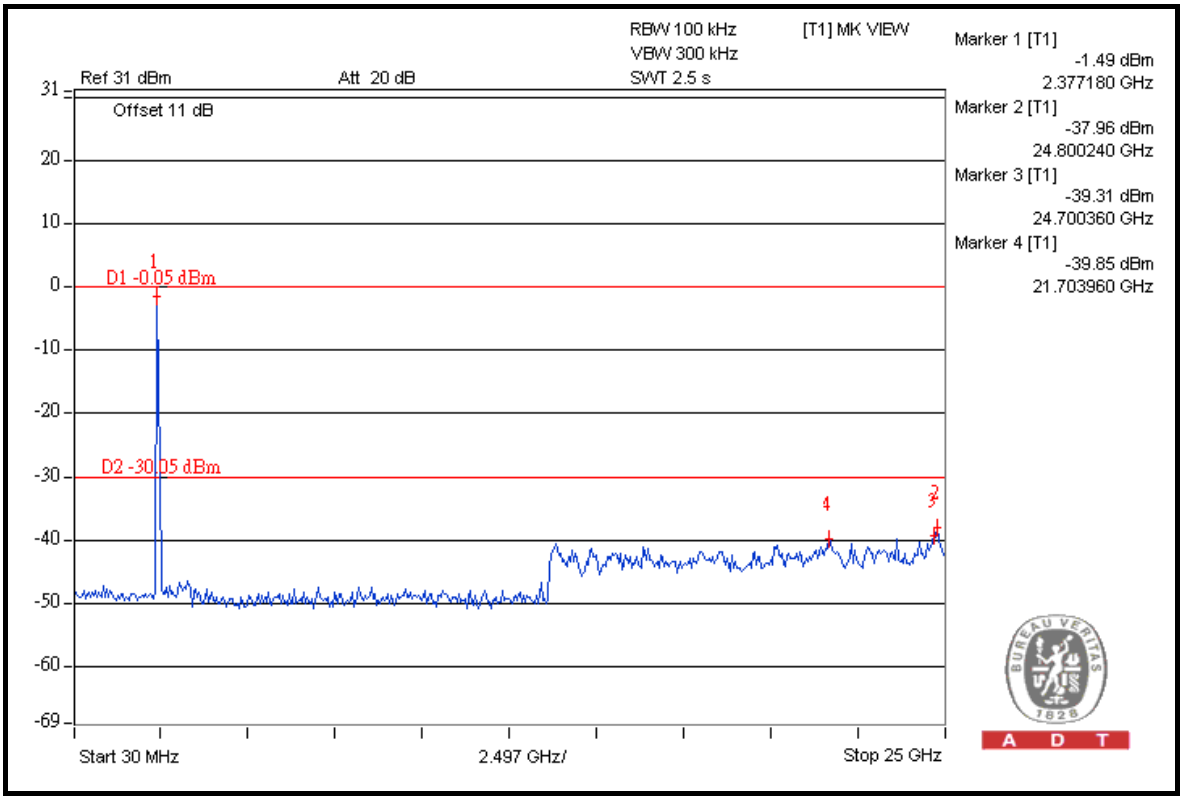
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|---|---|---|---|---|
| 2462.00 (PK) | 105.6 | 48.24 | 57.36 | 74.00 |
| 2462.00 (AV) | 95.6 | 53.04 | 42.56 | 54.00 |

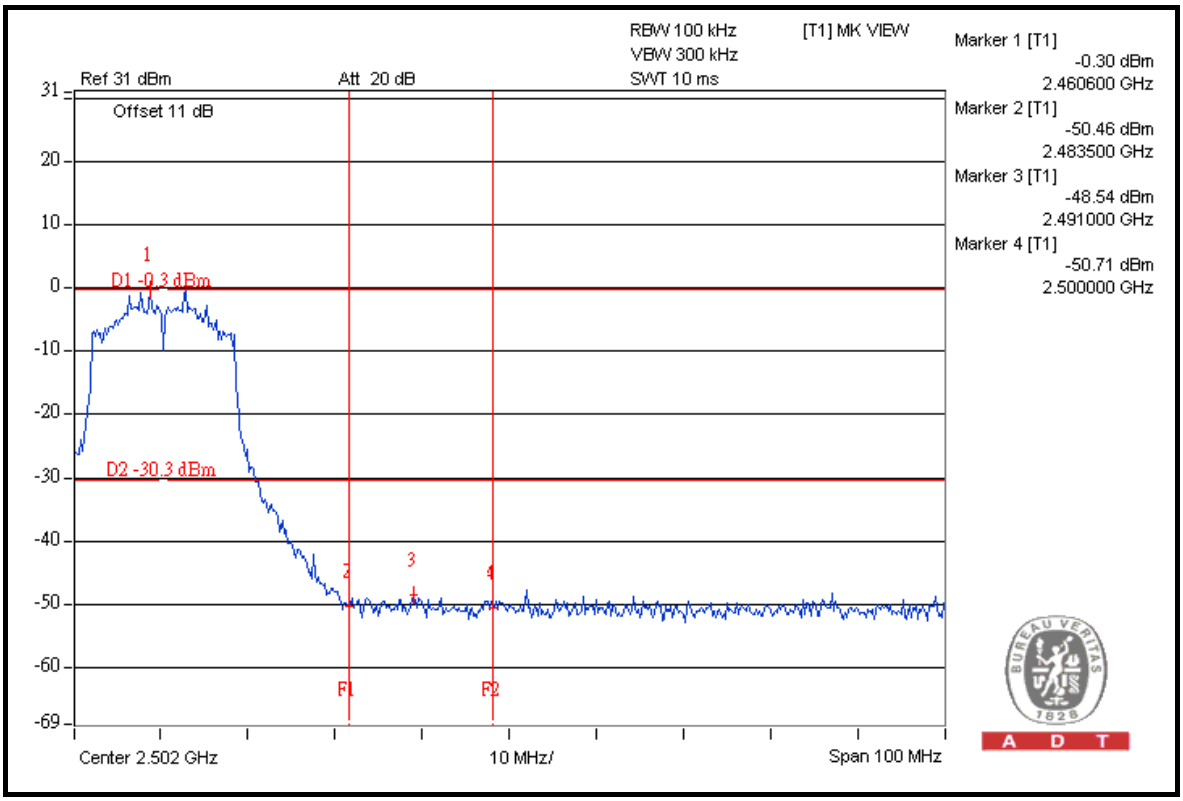
**NOTE:**

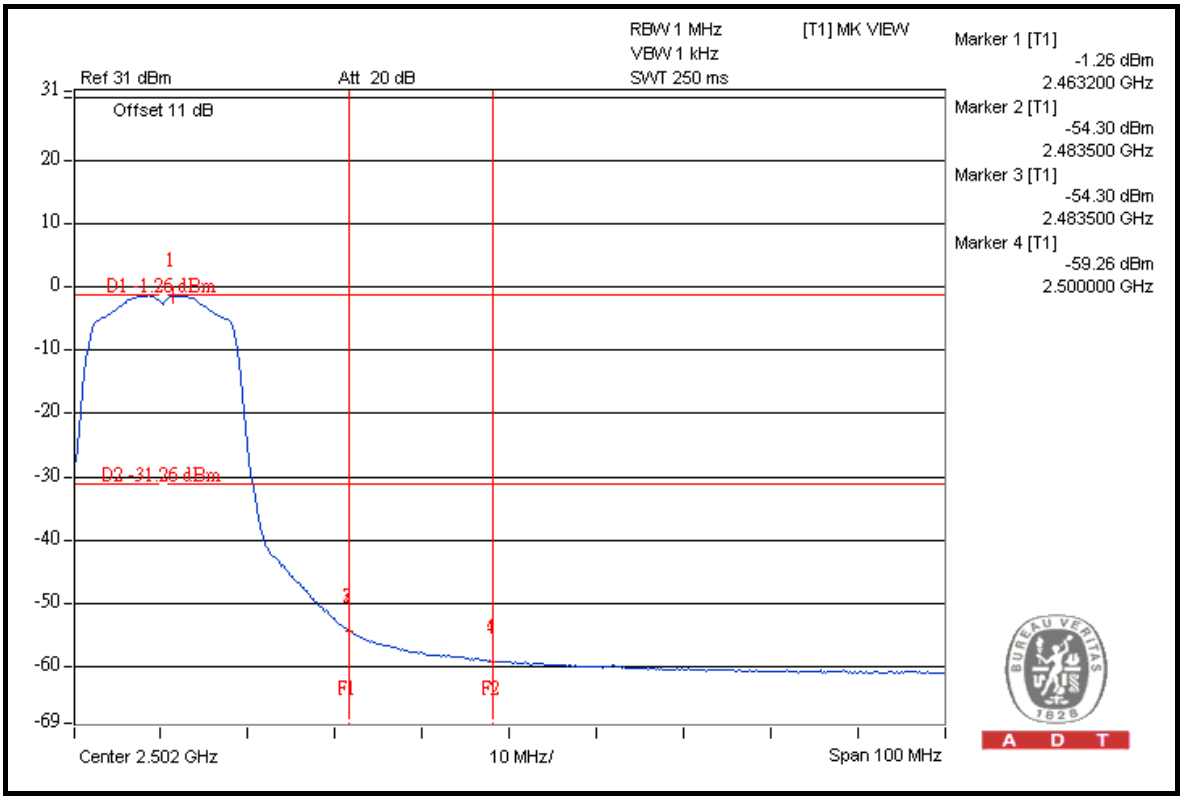
1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 3 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.

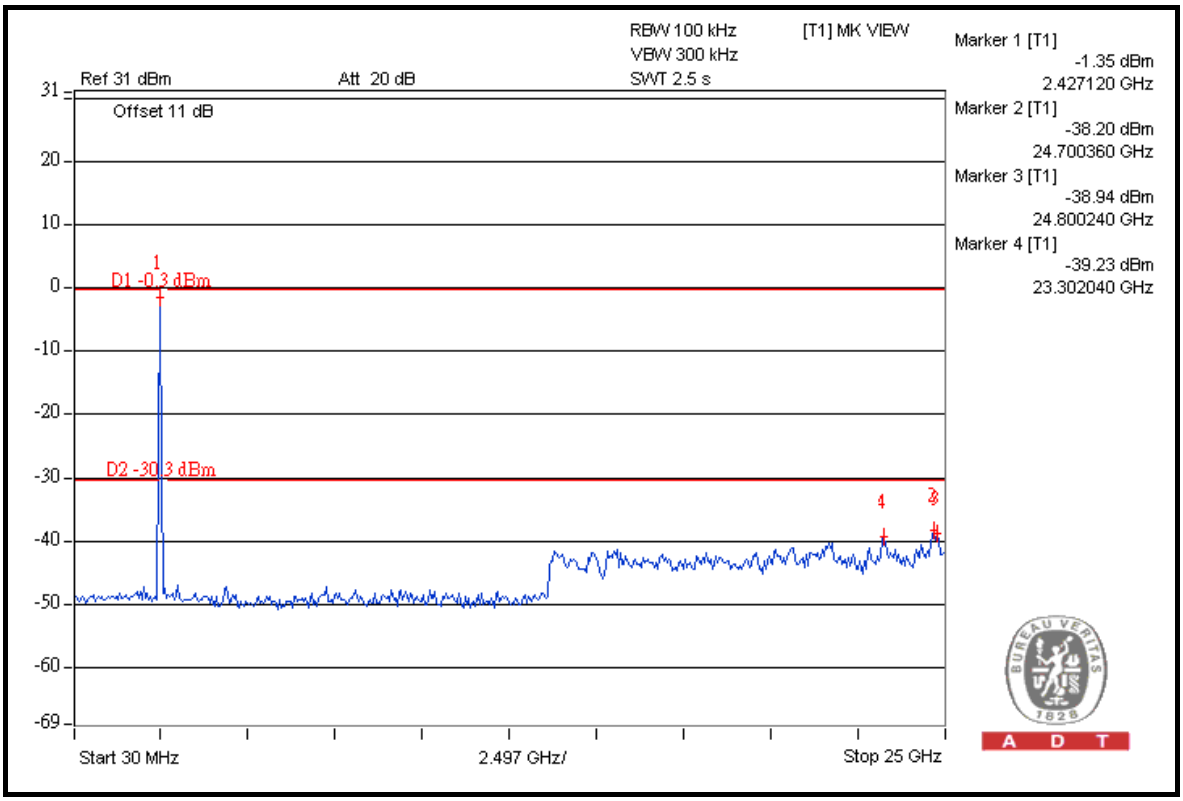

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -0.05 dBm
D2 -30.05 dBm
Marker 1 [T1]
-0.05 dBm
2.413400 GHz
Marker 2 [T1]
-34.65 dBm
2.400000 GHz
Marker 3 [T1]
-33.89 dBm
2.399800 GHz
Marker 4 [T1]
-50.03 dBm
2.390000 GHz
Marker 5 [T1]
-46.97 dBm
2.389600 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 1 kHz
SWT 250 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -1.16 dBm
D2 -31.16 dBm
Marker 1 [T1]
-1.16 dBm
2.414000 GHz
Marker 2 [T1]
-40.68 dBm
2.400000 GHz
Marker 3 [T1]
-40.68 dBm
2.400000 GHz
Marker 4 [T1]
-55.01 dBm
2.390000 GHz
Marker 5 [T1]
-55.01 dBm
2.390000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -0.05 dBm
D2 -30.05 dBm
Marker 1 [T1]
-1.49 dBm
2.377180 GHz
Marker 2 [T1]
-37.96 dBm
24.800240 GHz
Marker 3 [T1]
-39.31 dBm
24.700360 GHz
Marker 4 [T1]
-39.85 dBm
21.703960 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -0.3 dBm
D2 -30.3 dBm
F1
F2
Marker 1 [T1]
-0.30 dBm
2.460600 GHz
Marker 2 [T1]
-50.46 dBm
2.483500 GHz
Marker 3 [T1]
-48.54 dBm
2.491000 GHz
Marker 4 [T1]
-50.71 dBm
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 1 kHz
SWT 250 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -1.26 dBm
D2 -31.26 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
-1.26 dBm
2.463200 GHz
Marker 2 [T1]
-54.30 dBm
2.483500 GHz
Marker 3 [T1]
-54.30 dBm
2.483500 GHz
Marker 4 [T1]
-59.26 dBm
2.500000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -0.3 dBm
D2 -30.3 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
Marker 1 [T1]
-1.35 dBm
2.427120 GHz
Marker 2 [T1]
-38.20 dBm
24.700360 GHz
Marker 3 [T1]
-38.94 dBm
24.800240 GHz
Marker 4 [T1]
-39.23 dBm
23.302040 GHz

## 802.11n (20MHz)

**RESTRICT BAND (2310 ~ 2390 MHz)**

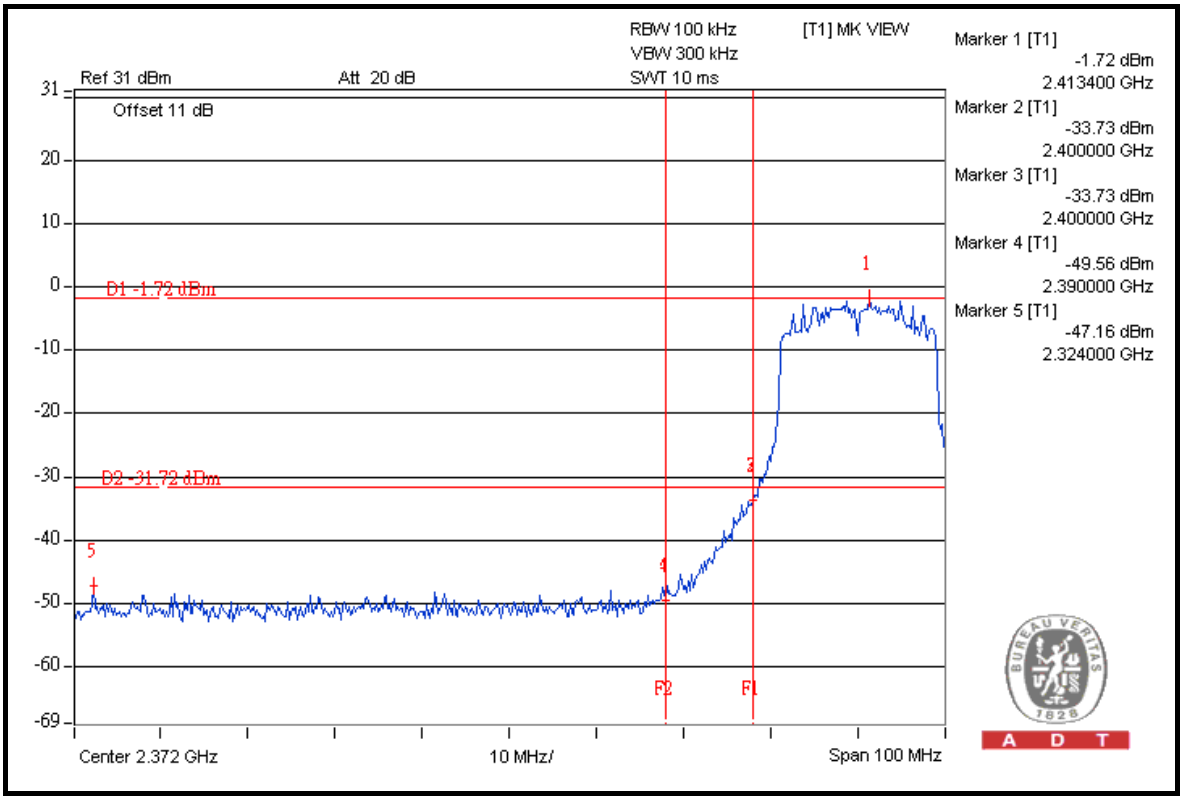
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|---|---|---|---|---|
| 2412.00 (PK) | 104.0 | 45.44 | 58.56 | 74.00 |
| 2412.00 (AV) | 94.1 | 52.92 | 41.18 | 54.00 |

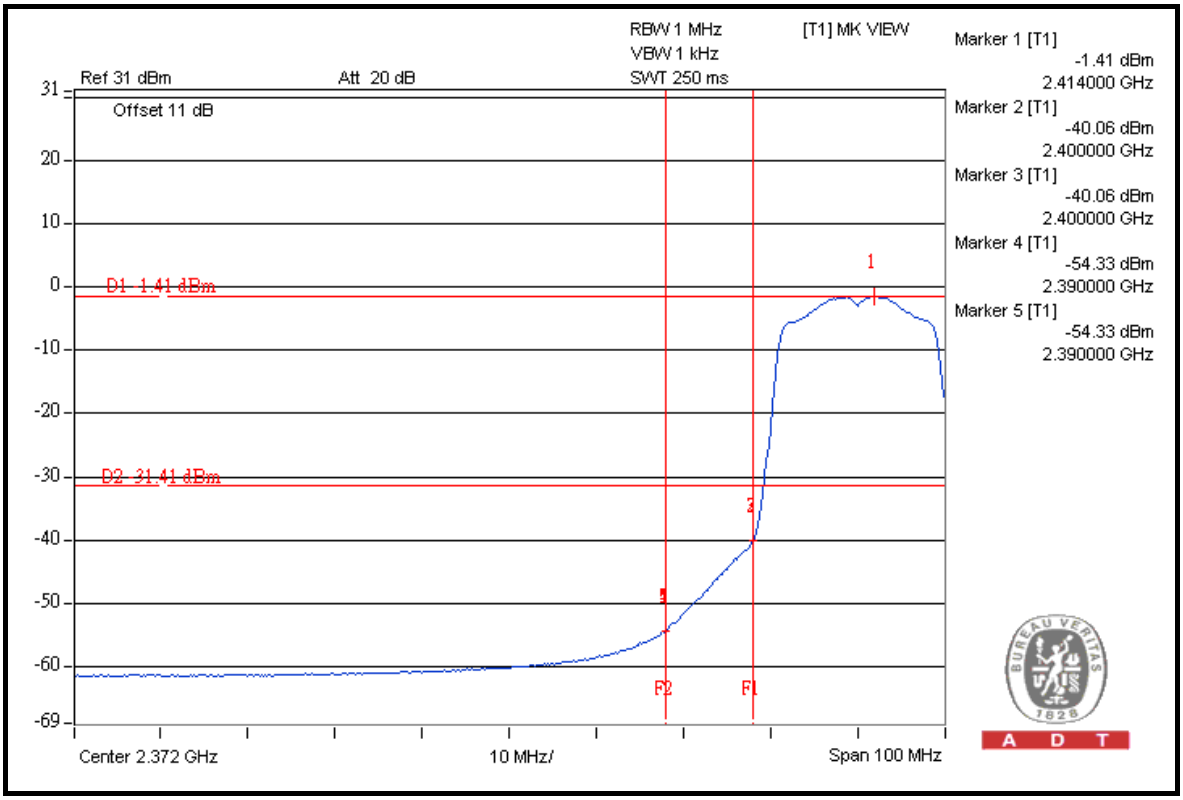
**RESTRICT BAND (2483.5 ~ 2500 MHz)**

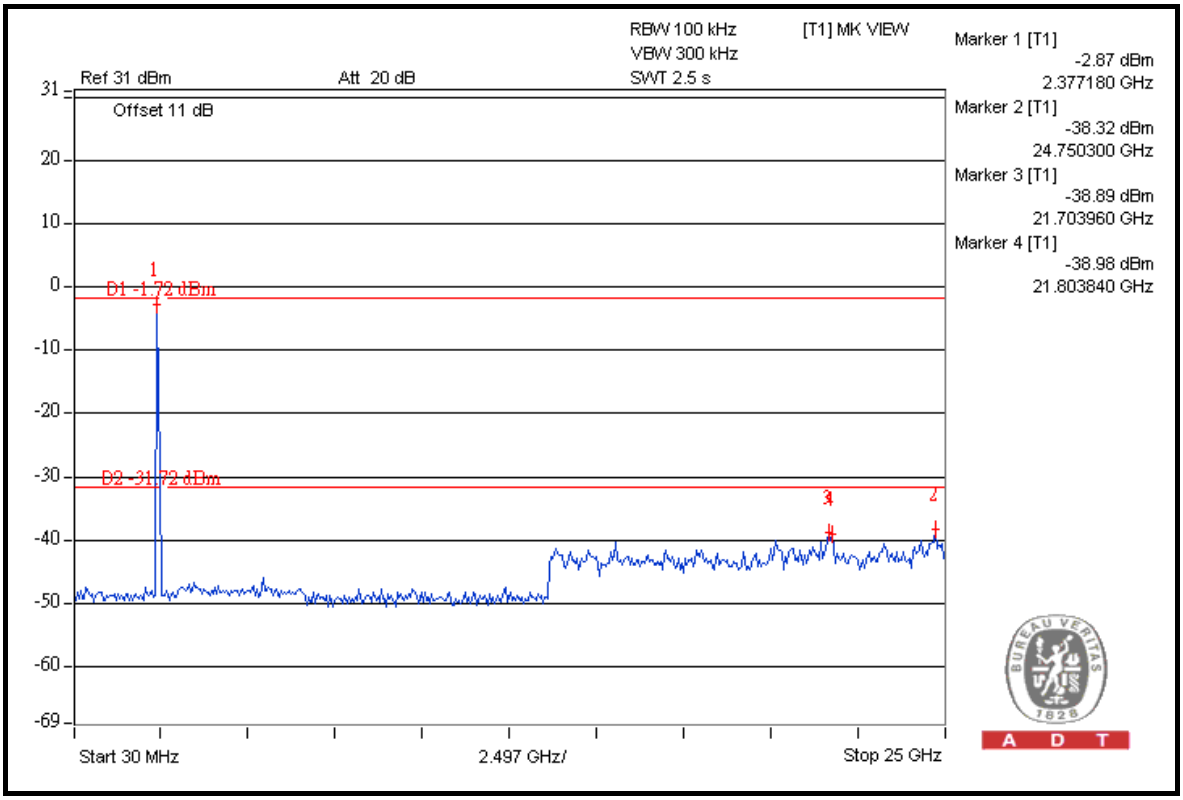
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|---|---|---|---|---|
| 2462.00 (PK) | 105.4 | 47.16 | 58.24 | 74.00 |
| 2462.00 (AV) | 95.3 | 52.90 | 42.40 | 54.00 |

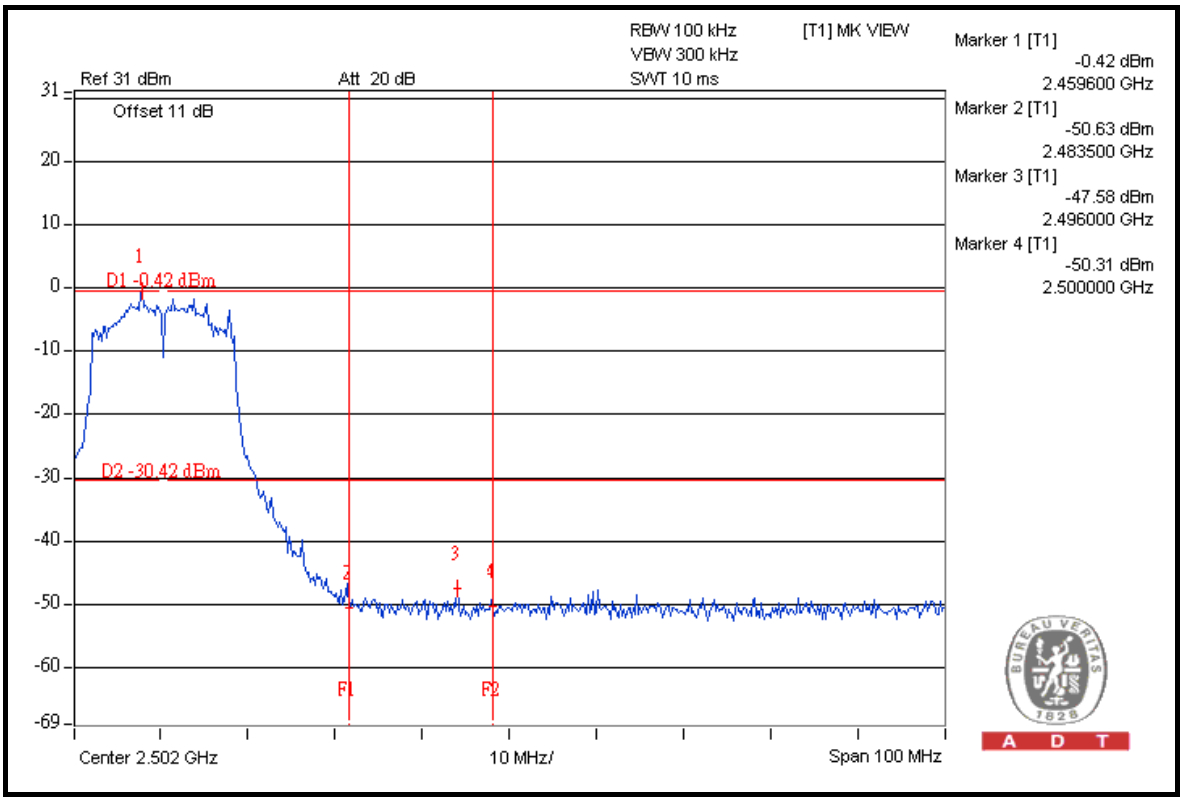
**NOTE:**

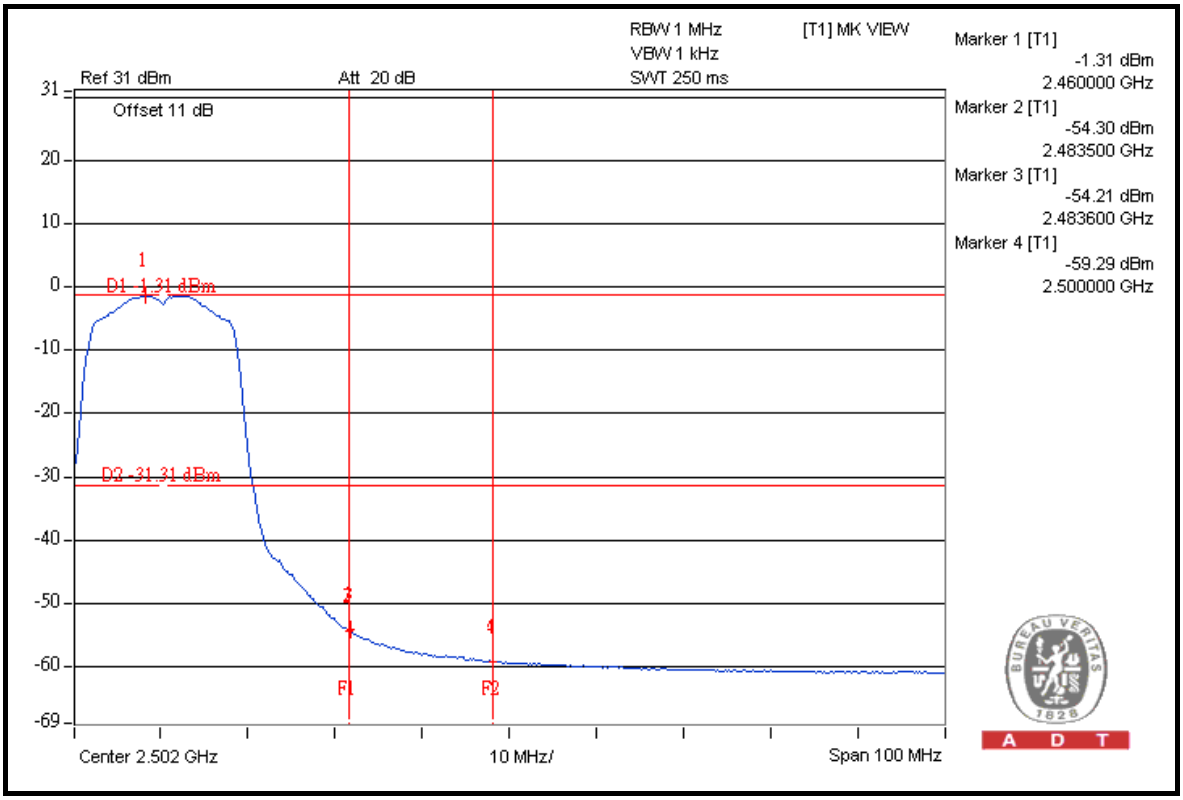
1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 2 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.

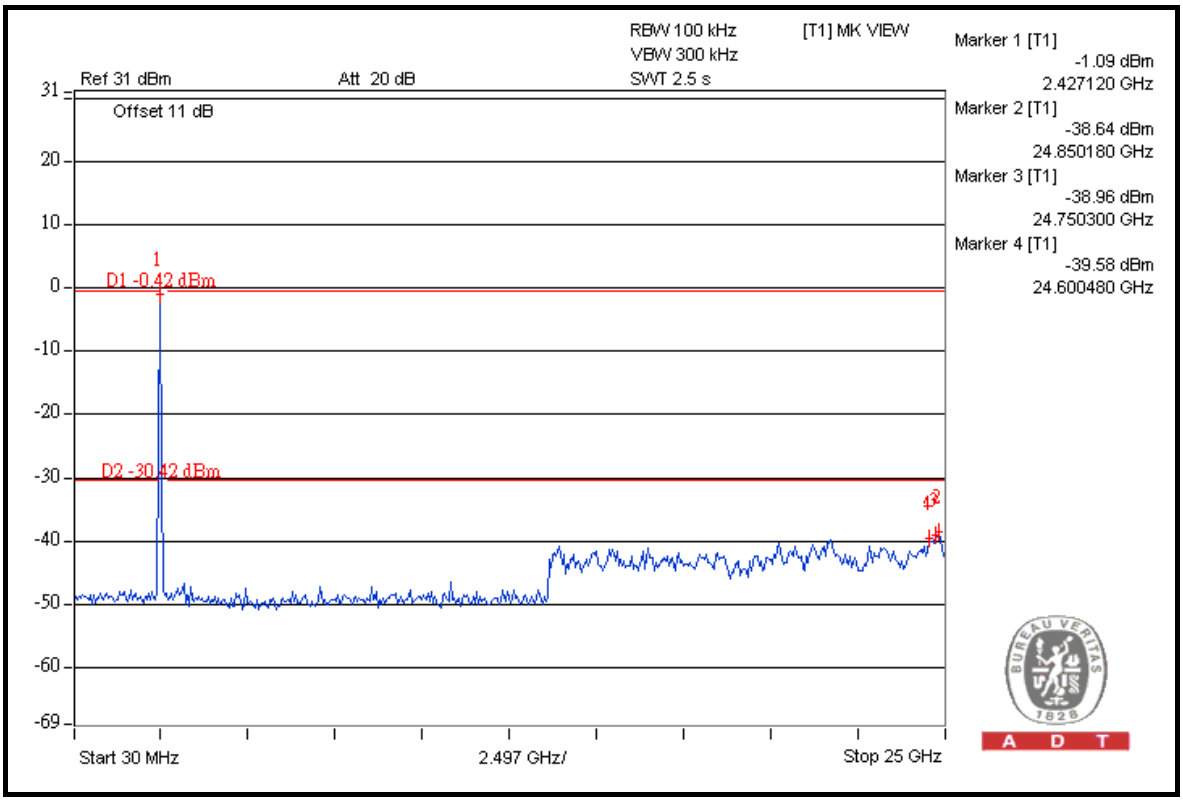

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -1.72 dBm
D2 -31.72 dBm
Marker 1 [T1]
-1.72 dBm
2.413400 GHz
Marker 2 [T1]
-33.73 dBm
2.400000 GHz
Marker 3 [T1]
-33.73 dBm
2.400000 GHz
Marker 4 [T1]
-49.56 dBm
2.390000 GHz
Marker 5 [T1]
-47.16 dBm
2.324000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 1 kHz
SWT 250 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -1.41 dBm
D2 -31.41 dBm
Marker 1 [T1]
-1.41 dBm
2.414000 GHz
Marker 2 [T1]
-40.06 dBm
2.400000 GHz
Marker 3 [T1]
-40.06 dBm
2.400000 GHz
Marker 4 [T1]
-54.33 dBm
2.390000 GHz
Marker 5 [T1]
-54.33 dBm
2.390000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -1.72 dBm
D2 -31.72 dBm
Marker 1 [T1]
-2.87 dBm
2.377180 GHz
Marker 2 [T1]
-38.32 dBm
24.750300 GHz
Marker 3 [T1]
-38.89 dBm
21.703960 GHz
Marker 4 [T1]
-38.98 dBm
21.803840 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -0.42 dBm
D2 -30.42 dBm
Marker 1 [T1]
-0.42 dBm
2.459600 GHz
Marker 2 [T1]
-50.63 dBm
2.483500 GHz
Marker 3 [T1]
-47.58 dBm
2.496000 GHz
Marker 4 [T1]
-50.31 dBm
2.500000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 1 kHz
SWT 250 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -1.31 dBm
D2 -31.31 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
-1.31 dBm
2.460000 GHz
Marker 2 [T1]
-54.30 dBm
2.483500 GHz
Marker 3 [T1]
-54.21 dBm
2.483600 GHz
Marker 4 [T1]
-59.29 dBm
2.500000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -0.42 dBm
D2 -30.42 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
Marker 1 [T1]
-1.09 dBm
2.427120 GHz
Marker 2 [T1]
-38.64 dBm
24.850180 GHz
Marker 3 [T1]
-38.96 dBm
24.750300 GHz
Marker 4 [T1]
-39.58 dBm
24.600480 GHz

# 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

# 6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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


**Linko EMC/RF Lab**:
Tel: 886-2-26052180
Fax: 886-2-26051924

**Hsin Chu EMC/RF Lab**:
Tel: 886-3-5935343
Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety Telecom Lab**:
Tel: 886-3-3183232
Fax: 886-3-3185050

**Email:** service.adt@tw.bureauveritas.com
**Web Site:** www.adt.com.tw


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

# 7. 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.

**---END---**