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# FCC TEST REPORT

**REPORT NO.:** RF991012C11

**MODEL NO.:** TG590 / DSLMBB590 AA

**FCC ID:** RSE-TG590

**RECEIVED:** Oct. 12, 2010

**TESTED:** Oct. 18 ~ Dec. 01, 2010

**ISSUED:** Dec. 02, 2010

**APPLICANT:** Thomson Telecom Belgium

**ADDRESS:** Prins Boudewijnlaan 47 Edegem Belgium B-2650

**ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.)  
Ltd., Taoyuan Branch

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## 1. CERTIFICATION

**PRODUCT:** Broadband Home Router

**MODEL:** TG590 / DSLMBB590 AA

**BRAND:** THOMSON

**APPLICANT:** Thomson Telecom Belgium

**TEST SAMPLE:** ENGINEERING SAMPLE

**TESTED:** Oct. 18 ~ Dec. 01, 2010

**STANDARDS:** FCC Part 15, Subpart C (Section 15.247)

ANSI C63.4-2003

The above equipment (Model: TG590 / DSLMBB590 AA) 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 , **DATE:** Dec. 02, 2010  
Andrea Hsia / Specialist

**TECHNICAL**  
**ACCEPTANCE** : Long Chen , **DATE:** Dec. 02, 2010  
Responsible for RF Long Chen / Senior Engineer

**APPROVED BY** : Gary Chang , **DATE:** Dec. 02, 2010  
Gary Chang / Assistant 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. Minimum passing margin is -6.15dB at 0.150MHz.  |
| 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 -1.0dB at 7311.00MHz. |
| 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.   |
| 15.203  | Antenna Requirement  | PASS   | Antenna connector is I-Pex not a standard connector.                           |

### 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  | 2.93 dB     |
|                     | 200MHz ~1000MHz | 2.95 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  $k = 2$ .



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### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

|                              |  |
|------------------------------|--|
| <b>EUT</b>                   | Broadband Home Router  |
| <b>MODEL NO.</b>             | TG590 / DSLMBB590 AA   |
| <b>FCC ID</b>                | RSE-TG590  |
| <b>POWER SUPPLY</b>          | 12Vdc  |
| <b>MODULATION TYPE</b>       | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM  |
| <b>MODULATION TECHNOLOGY</b> | DSSS, OFDM   |
| <b>TRANSFER RATE</b>         | IEEE802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps<br>IEEE802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps<br>IEEE802.11n: up to 130Mbps |
| <b>OPERATING FREQUENCY</b>   | 2412 ~ 2462MHz   |
| <b>NUMBER OF CHANNEL</b>     | 11   |
| <b>OUTPUT POWER</b>          | 771.7mW  |
| <b>ANTENNA TYPE</b>          | Metal antenna with 3.89002dBi gain (Antenna 0)<br>Metal antenna with 2.72646dBi gain (Antenna 1)                                   |
| <b>ANTENNA CONNECTOR</b>     | I-Pex  |
| <b>DATA CABLE</b>            | NA   |
| <b>I/O PORTS</b>             | Refer to note as below   |
| <b>ACCESSORY DEVICES</b>     | Adapter  |

**NOTE:**

- The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

| MODULATION MODE        | TX FUNCTION |
|------------------------|-------------|
| IEEE802.11b            | 1TX         |
| IEEE802.11g            | 1TX         |
| IEEE802.11n(OBW=20MHz) | 1TX/ 2TX    |

- The EUT was powered by the following adapter:

|                    |                                       |
|--------------------|---------------------------------------|
| <b>BRAND:</b>      | PHIHONG                               |
| <b>MODEL:</b>      | PSM24A-120(A)                         |
| <b>INPUT:</b>      | 100-130Vac, 60Hz , 0.6A MAX           |
| <b>OUTPUT:</b>     | 12Vdc, 2A                             |
| <b>POWER LINE:</b> | 1.6 m non-shielded cable without core |

- EUT interface ports.

| DC in  | MoCA 1.0/1.1 compliant F-Connector | WAN GbE | LAN GbE | WLAN (IEEE 802.11n) 2.4GHz only | USB 2.0 (host) |
|--------|------------------------------------|---------|---------|---------------------------------|----------------|
| 1 port | 1 port                             | 1 port  | 4 ports | 1 port                          | 2 ports        |

- 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.

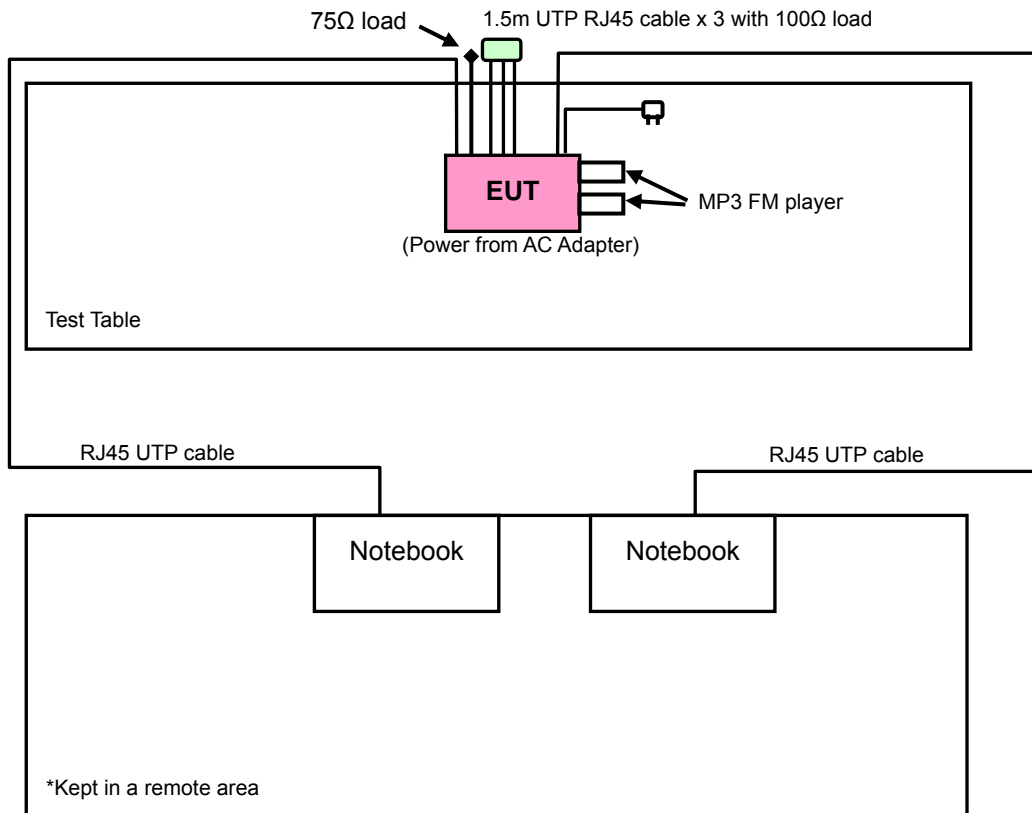
5. Software filename: gant-d\_AA\_linux\_gomp.bli.
6. Software Version: TMM 1.0.0.5.
7. Software ENV list: please refer to appendix B.

### 3.2 DESCRIPTION OF TEST MODES

11 channels are provided as below:

| 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 $\geq$ 1G  | RE<1G | PLC | APCM |             |
| -                  | √             | √     | √   | √    | -           |

Where **RE $\geq$ 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 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 FUNCTION |
|-------------------------|-------------------|----------------|-----------------------|-----------------|------------------|-------------|
| IEEE802.11b             | 1 to 11           | 1, 6, 11       | DSSS                  | DBPSK           | 1.0              | 1TX         |
| IEEE802.11g             | 1 to 11           | 1, 6, 11       | OFDM                  | BPSK            | 6.0              | 1TX         |
| IEEE802.11n (OBW=20MHz) | 1 to 11           | 1, 6, 11       | OFDM                  | BPSK            | 6.5              | 1TX         |
| IEEE802.11n (OBW=20MHz) | 1 to 11           | 1, 6, 11       | OFDM                  | BPSK            | 13.0             | 2TX         |

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

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, 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) | TX FUNCTION |
|-------------------------|-------------------|----------------|-----------------------|-----------------|------------------|-------------|
| IEEE802.11n (OBW=20MHz) | 1 to 11           | 6              | OFDM                  | BPSK            | 13.0             | 2TX         |

#### 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 FUNCTION |
|-------------------------|-------------------|----------------|-----------------------|-----------------|------------------|-------------|
| IEEE802.11n (OBW=20MHz) | 1 to 11           | 6              | OFDM                  | BPSK            | 13.0             | 2TX         |





**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 FUNCTION |
|-------------------------|-------------------|----------------|-----------------------|-----------------|------------------|-------------|
| IEEE802.11b             | 1 to 11           | 1, 11          | DSSS                  | DBPSK           | 1.0              | 1TX         |
| IEEE802.11g             | 1 to 11           | 1, 11          | OFDM                  | BPSK            | 6.0              | 1TX         |
| IEEE802.11n (OBW=20MHz) | 1 to 11           | 1, 11          | OFDM                  | BPSK            | 6.5              | 1TX         |
| IEEE802.11n (OBW=20MHz) | 1 to 11           | 1, 11          | OFDM                  | BPSK            | 13.0             | 2TX         |

**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) | TX FUNCTION |
|-------------------------|-------------------|----------------|-----------------------|-----------------|------------------|-------------|
| IEEE802.11b             | 1 to 11           | 1, 6, 11       | DSSS                  | DBPSK           | 1.0              | 1TX         |
| IEEE802.11g             | 1 to 11           | 1, 6, 11       | OFDM                  | BPSK            | 6.0              | 1TX         |
| IEEE802.11n (OBW=20MHz) | 1 to 11           | 1, 6, 11       | OFDM                  | BPSK            | 6.5              | 1TX         |
| IEEE802.11n (OBW=20MHz) | 1 to 11           | 1, 6, 11       | OFDM                  | BPSK            | 13.0             | 2TX         |

**TEST CONDITION:**

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS  | INPUT POWER  | TESTED BY  |
|---------------|---------------------------|--------------|------------|
| RE≥1G         | 26deg. C, 65%RH, 1008 hPa | 120Vac, 60Hz | Frank Wang |
| RE<1G         | 25deg. C, 65%RH, 1012 hPa | 120Vac, 60Hz | Frank Wang |
| PLC           | 25deg. C, 68%RH, 1010 hPa | 120Vac, 60Hz | Sun Lin    |
| APCM          | 26deg. C, 65%RH, 1010 hPa | 120Vac, 60Hz | Frank Wang |



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### 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

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   | MP3 FM PLAYER | Dell  | HV04T     | HRFY781                      | FCC DoC Approved |
| 2   | MP3 FM PLAYER | Dell  | HV04T     | 13331028241                  | FCC DoC Approved |
| 3   | NOTEBOOK      | DELL  | D600      | CN-0C3038-486<br>43-3A8-8646 | QDS-BRCM1005-D   |
| 4   | NOTEBOOK      | DELL  | D820      | 21498926752                  | FCC DoC Approved |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|-----|---|
| 1   | NA  |
| 2   | NA  |
| 3   | 10m RJ45 UTP cable                                  |
| 4   | 10m RJ45 UTP cable                                  |

**NOTE:**

1. All power cords of the above support units are non shielded (1.8m).
2. Items 3 ~ 4 acted as communication partners to transfer data.
3. For coaxial port: 1.5m coaxial cable.



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## 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.



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#### 4.1.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER              | MODEL NO.                    | SERIAL NO.  | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|---|------------------------------|-------------|---------------------|-------------------------|
| Test Receiver<br>ROHDE & SCHWARZ        | ESIB7                        | 100188      | Dec. 21, 2009       | Dec. 20, 2010           |
| Spectrum Analyzer<br>ROHDE & SCHWARZ    | FSP40                        | 100269      | Dec. 31, 2009       | Dec. 30, 2010           |
| BILOG Antenna<br>SCHWARZBECK            | VULB9168                     | 9168-160    | Apr. 27, 2010       | Apr. 26, 2011           |
| HORN Antenna<br>SCHWARZBECK             | 9120D                        | 9120D-405   | Feb. 03, 2010       | Feb. 02, 2011           |
| HORN Antenna<br>SCHWARZBECK             | BBHA 9170                    | BBHA9170243 | Dec. 25, 2009       | Dec. 24, 2010           |
| Preamplifier<br>Agilent                 | 8449B                        | 3008A01910  | Sep. 09, 2010       | Sep. 08, 2011           |
| Preamplifier<br>Agilent                 | 8447D                        | 2944A10638  | Dec. 21, 2009       | Dec. 20, 2010           |
| RF signal cable<br>HUBER+SUHNNER        | SUCOFLEX 104                 | 238141/4    | May 14, 2010        | May 13, 2011            |
| RF signal cable<br>HUBER+SUHNNER        | SUCOFLEX 104                 | 12738/6     | May 14, 2010        | May 13, 2011            |
| Software<br>ADT.                        | ADT_Radiated_<br>V7.6.15.9.2 | NA          | NA                  | NA                      |
| Antenna Tower<br>inn-co GmbH            | MA 4000                      | 013303      | NA                  | NA                      |
| Antenna Tower Controller<br>inn-co GmbH | CO2000                       | 017303      | NA                  | NA                      |
| Turn Table<br>ADT.                      | TT100.                       | TT93021703  | NA                  | NA                      |
| Turn Table Controller<br>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.

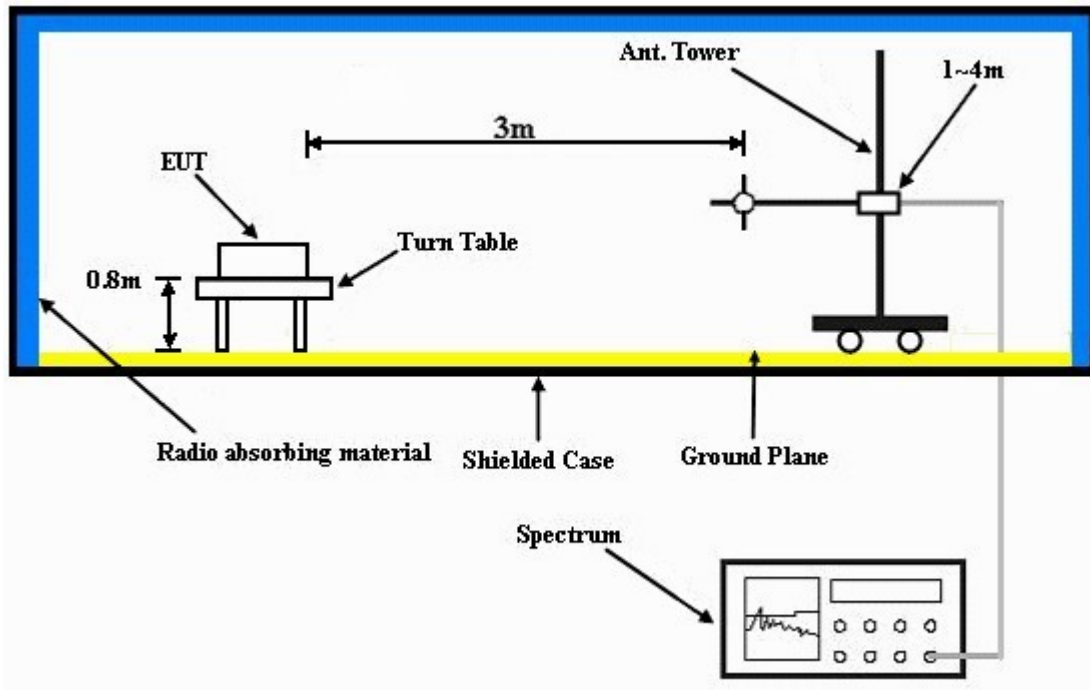
**NOTE:**

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 the testing table.
- b. Prepared notebooks system outside of testing area to act as communication partners.
- c. The communication partner connected with EUT via a RJ45 UTP cable and run telnet program to send commands to the EUT to set the EUT under transmission condition continuously at specific channel frequency
- d. The communication partner sent data to EUT by command "PING".



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#### 4.1.7 TEST RESULTS

IEEE802.11b, data rate: 1Mbps

| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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     | 62.7 PK                 | 74.0           | -11.3       | 1.36 H             | 327                  | 32.20            | 30.50                    |
| 2   | 2390.00     | 51.1 AV                 | 54.0           | -2.9        | 1.36 H             | 327                  | 20.60            | 30.50                    |
| 3   | *2412.00    | 113.6 PK                |                |             | 1.32 H             | 326                  | 83.00            | 30.60                    |
| 4   | *2412.00    | 109.2 AV                |                |             | 1.32 H             | 326                  | 78.60            | 30.60                    |
| 5   | 4824.00     | 50.4 PK                 | 74.0           | -23.6       | 1.00 H             | 319                  | 14.30            | 36.10                    |
| 6   | 4824.00     | 45.0 AV                 | 54.0           | -9.0        | 1.00 H             | 319                  | 8.90             | 36.10                    |
| 7   | #7236.00    | 53.5 PK                 | 93.6           | -40.1       | 1.65 H             | 281                  | 11.10            | 42.40                    |
| 8   | #7236.00    | 43.1 AV                 | 89.2           | -46.1       | 1.65 H             | 281                  | 0.70             | 42.40                    |
| 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     | 60.8 PK                 | 74.0           | -13.2       | 1.72 V             | 29                   | 30.30            | 30.50                    |
| 2   | 2390.00     | 51.5 AV                 | 54.0           | -2.5        | 1.72 V             | 29                   | 21.00            | 30.50                    |
| 3   | *2412.00    | 113.3 PK                |                |             | 1.67 V             | 31                   | 82.70            | 30.60                    |
| 4   | *2412.00    | 109.0 AV                |                |             | 1.67 V             | 31                   | 78.40            | 30.60                    |
| 5   | 4824.00     | 55.3 PK                 | 74.0           | -18.7       | 1.05 V             | 181                  | 19.20            | 36.10                    |
| 6   | 4824.00     | 51.0 AV                 | 54.0           | -3.0        | 1.05 V             | 181                  | 14.90            | 36.10                    |
| 7   | #7236.00    | 60.0 PK                 | 93.3           | -33.3       | 1.95 V             | 158                  | 17.60            | 42.40                    |
| 8   | #7236.00    | 54.2 AV                 | 89.0           | -34.8       | 1.95 V             | 158                  | 11.80            | 42.40                    |

- 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.
  6. “#”:The radiated frequency is out the restricted band.



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| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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    | 113.8 PK                |                |             | 1.05 H             | 200                  | 83.20            | 30.60                    |
| 2   | *2437.00    | 109.5 AV                |                |             | 1.05 H             | 200                  | 78.90            | 30.60                    |
| 3   | 4874.00     | 50.0 PK                 | 74.0           | -24.0       | 1.00 H             | 201                  | 13.80            | 36.20                    |
| 4   | 4874.00     | 44.4 AV                 | 54.0           | -9.6        | 1.00 H             | 201                  | 8.20             | 36.20                    |
| 5   | 7311.00     | 54.1 PK                 | 74.0           | -19.9       | 1.68 H             | 105                  | 11.50            | 42.60                    |
| 6   | 7311.00     | 43.8 AV                 | 54.0           | -10.2       | 1.68 H             | 105                  | 1.20             | 42.60                    |
| 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    | 113.8 PK                |                |             | 1.16 V             | 117                  | 83.20            | 30.60                    |
| 2   | *2437.00    | 109.4 AV                |                |             | 1.16 V             | 117                  | 78.80            | 30.60                    |
| 3   | 4874.00     | 53.4 PK                 | 74.0           | -20.6       | 1.16 V             | 183                  | 17.20            | 36.20                    |
| 4   | 4874.00     | 49.6 AV                 | 54.0           | -4.4        | 1.16 V             | 183                  | 13.40            | 36.20                    |
| 5   | 7311.00     | 59.3 PK                 | 74.0           | -14.7       | 1.92 V             | 156                  | 16.70            | 42.60                    |
| 6   | 7311.00     | 53.0 AV                 | 54.0           | -1.0        | 1.92 V             | 156                  | 10.40            | 42.60                    |

- 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.





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| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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    | 113.9 PK                |                |             | 1.03 H             | 202                  | 83.20            | 30.70                    |
| 2   | *2462.00    | 109.3 AV                |                |             | 1.03 H             | 202                  | 78.60            | 30.70                    |
| 3   | 2483.50     | 61.8 PK                 | 74.0           | -12.2       | 1.00 H             | 198                  | 31.00            | 30.80                    |
| 4   | 2483.50     | 50.2 AV                 | 54.0           | -3.8        | 1.00 H             | 198                  | 19.40            | 30.80                    |
| 5   | 4924.00     | 49.9 PK                 | 74.0           | -24.1       | 1.01 H             | 204                  | 13.60            | 36.30                    |
| 6   | 4924.00     | 44.1 AV                 | 54.0           | -9.9        | 1.01 H             | 204                  | 7.80             | 36.30                    |
| 7   | 7386.00     | 51.6 PK                 | 74.0           | -22.4       | 1.65 H             | 21                   | 8.90             | 42.70                    |
| 8   | 7386.00     | 38.2 AV                 | 54.0           | -15.8       | 1.65 H             | 21                   | -4.50            | 42.70                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.   | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1   | *2462.00    | 113.6 PK                |                |             | 1.70 V             | 176                  | 82.90            | 30.70                    |
| 2   | *2462.00    | 109.1 AV                |                |             | 1.70 V             | 176                  | 78.40            | 30.70                    |
| 3   | 2483.50     | 60.4 PK                 | 74.0           | -13.6       | 1.66 V             | 159                  | 29.60            | 30.80                    |
| 4   | 2483.50     | 49.0 AV                 | 54.0           | -5.0        | 1.66 V             | 159                  | 18.20            | 30.80                    |
| 5   | 4924.00     | 51.6 PK                 | 74.0           | -22.4       | 2.40 V             | 32                   | 15.30            | 36.30                    |
| 6   | 4924.00     | 47.3 AV                 | 54.0           | -6.7        | 2.40 V             | 32                   | 11.00            | 36.30                    |
| 7   | 7386.00     | 59.0 PK                 | 74.0           | -15.0       | 1.88 V             | 151                  | 16.30            | 42.70                    |
| 8   | 7386.00     | 52.5 AV                 | 54.0           | -1.5        | 1.88 V             | 151                  | 9.80             | 42.70                    |

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



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IEEE802.11g, data rate: 6Mbps

| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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     | 64.5 PK                 | 74.0           | -9.5        | 1.04 H             | 199                  | 34.00            | 30.50                    |
| 2   | 2390.00     | 47.4 AV                 | 54.0           | -6.6        | 1.04 H             | 199                  | 16.90            | 30.50                    |
| 3   | *2412.00    | 107.4 PK                |                |             | 1.04 H             | 177                  | 76.80            | 30.60                    |
| 4   | *2412.00    | 96.0 AV                 |                |             | 1.04 H             | 177                  | 65.40            | 30.60                    |
| 5   | 4824.00     | 49.2 PK                 | 74.0           | -24.8       | 1.04 H             | 199                  | 13.10            | 36.10                    |
| 6   | 4824.00     | 34.1 AV                 | 54.0           | -19.9       | 1.04 H             | 199                  | -2.00            | 36.10                    |
| 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     | 66.0 PK                 | 74.0           | -8.0        | 1.50 V             | 114                  | 35.50            | 30.50                    |
| 2   | 2390.00     | 48.8 AV                 | 54.0           | -5.2        | 1.50 V             | 114                  | 18.30            | 30.50                    |
| 3   | *2412.00    | 106.8 PK                |                |             | 1.00 V             | 111                  | 76.20            | 30.60                    |
| 4   | *2412.00    | 95.0 AV                 |                |             | 1.00 V             | 111                  | 64.40            | 30.60                    |
| 5   | 4824.00     | 49.2 PK                 | 74.0           | -24.8       | 1.00 V             | 185                  | 13.10            | 36.10                    |
| 6   | 4824.00     | 33.8 AV                 | 54.0           | -20.2       | 1.00 V             | 185                  | -2.30            | 36.10                    |

- 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.



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| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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    | 111.0 PK                |                |             | 1.05 H             | 202                  | 80.40            | 30.60                    |
| 2   | *2437.00    | 99.6 AV                 |                |             | 1.05 H             | 202                  | 69.00            | 30.60                    |
| 3   | 4874.00     | 48.8 PK                 | 74.0           | -25.2       | 1.04 H             | 203                  | 12.60            | 36.20                    |
| 4   | 4874.00     | 33.6 AV                 | 54.0           | -20.4       | 1.04 H             | 203                  | -2.60            | 36.20                    |
| 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    | 110.4 PK                |                |             | 1.15 V             | 116                  | 79.80            | 30.60                    |
| 2   | *2437.00    | 99.0 AV                 |                |             | 1.15 V             | 116                  | 68.40            | 30.60                    |
| 3   | 4874.00     | 52.0 PK                 | 74.0           | -22.0       | 1.15 V             | 183                  | 15.80            | 36.20                    |
| 4   | 4874.00     | 36.5 AV                 | 54.0           | -17.5       | 1.15 V             | 183                  | 0.30             | 36.20                    |

- 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.



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| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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    | 108.5 PK                |                |             | 1.04 H             | 202                  | 77.80            | 30.70                    |
| 2   | *2462.00    | 97.1 AV                 |                |             | 1.04 H             | 202                  | 66.40            | 30.70                    |
| 3   | 2483.50     | 69.8 PK                 | 74.0           | -4.2        | 1.03 H             | 202                  | 39.00            | 30.80                    |
| 4   | 2483.50     | 49.3 AV                 | 54.0           | -4.7        | 1.03 H             | 202                  | 18.50            | 30.80                    |
| 5   | 4924.00     | 48.6 PK                 | 74.0           | -25.4       | 1.00 H             | 201                  | 12.30            | 36.30                    |
| 6   | 4924.00     | 33.2 AV                 | 54.0           | -20.8       | 1.00 H             | 201                  | -3.10            | 36.30                    |
| 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    | 108.0 PK                |                |             | 1.00 V             | 259                  | 77.30            | 30.70                    |
| 2   | *2462.00    | 96.5 AV                 |                |             | 1.00 V             | 259                  | 65.80            | 30.70                    |
| 3   | 2483.50     | 65.9 PK                 | 74.0           | -8.1        | 1.65 V             | 169                  | 35.10            | 30.80                    |
| 4   | 2483.50     | 48.8 AV                 | 54.0           | -5.2        | 1.65 V             | 169                  | 18.00            | 30.80                    |
| 5   | 4924.00     | 50.9 PK                 | 74.0           | -23.1       | 1.42 V             | 182                  | 14.60            | 36.30                    |
| 6   | 4924.00     | 35.1 AV                 | 54.0           | -18.9       | 1.42 V             | 182                  | -1.20            | 36.30                    |

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



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IEEE802.11n (OBW=20MHz), data rate: 6.5Mbps

| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|---|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.   | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1   | 2390.00     | 63.4 PK                 | 74.0           | -10.6       | 1.04 H             | 203                  | 32.90            | 30.50                    |
| 2   | 2390.00     | 47.4 AV                 | 54.0           | -6.6        | 1.04 H             | 203                  | 16.90            | 30.50                    |
| 3   | *2412.00    | 107.8 PK                |                |             | 1.03 H             | 201                  | 77.20            | 30.60                    |
| 4   | *2412.00    | 96.4 AV                 |                |             | 1.03 H             | 201                  | 65.80            | 30.60                    |
| 5   | 4824.00     | 49.0 PK                 | 74.0           | -25.0       | 1.00 H             | 205                  | 12.90            | 36.10                    |
| 6   | 4824.00     | 32.9 AV                 | 54.0           | -21.1       | 1.00 H             | 205                  | -3.20            | 36.10                    |
| 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     | 65.8 PK                 | 74.0           | -8.2        | 1.53 V             | 120                  | 35.30            | 30.50                    |
| 2   | 2390.00     | 49.4 AV                 | 54.0           | -4.6        | 1.53 V             | 120                  | 18.90            | 30.50                    |
| 3   | *2412.00    | 107.2 PK                |                |             | 1.00 V             | 111                  | 76.60            | 30.60                    |
| 4   | *2412.00    | 95.3 AV                 |                |             | 1.00 V             | 111                  | 64.70            | 30.60                    |
| 5   | 4824.00     | 50.2 PK                 | 74.0           | -23.8       | 1.18 V             | 175                  | 14.10            | 36.10                    |
| 6   | 4824.00     | 34.6 AV                 | 54.0           | -19.4       | 1.18 V             | 175                  | -1.50            | 36.10                    |

- 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.



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| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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    | 111.2 PK                |                |             | 1.03 H             | 203                  | 80.60            | 30.60                    |
| 2   | *2437.00    | 99.8 AV                 |                |             | 1.03 H             | 203                  | 69.20            | 30.60                    |
| 3   | 4874.00     | 48.8 PK                 | 74.0           | -25.2       | 1.00 H             | 206                  | 12.60            | 36.20                    |
| 4   | 4874.00     | 33.1 AV                 | 54.0           | -20.9       | 1.00 H             | 206                  | -3.10            | 36.20                    |
| 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    | 110.6 PK                |                |             | 1.51 V             | 124                  | 80.00            | 30.60                    |
| 2   | *2437.00    | 99.3 AV                 |                |             | 1.51 V             | 124                  | 68.70            | 30.60                    |
| 3   | 4874.00     | 51.7 PK                 | 74.0           | -22.3       | 1.22 V             | 179                  | 15.50            | 36.20                    |
| 4   | 4874.00     | 35.3 AV                 | 54.0           | -18.7       | 1.22 V             | 179                  | -0.90            | 36.20                    |

- 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.



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| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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    | 108.8 PK                |                |             | 1.00 H             | 202                  | 78.10            | 30.70                    |
| 2   | *2462.00    | 97.4 AV                 |                |             | 1.00 H             | 202                  | 66.70            | 30.70                    |
| 3   | 2483.50     | 65.3 PK                 | 74.0           | -8.7        | 1.00 H             | 203                  | 34.50            | 30.80                    |
| 4   | 2483.50     | 49.0 AV                 | 54.0           | -5.0        | 1.00 H             | 203                  | 18.20            | 30.80                    |
| 5   | 4924.00     | 48.0 PK                 | 74.0           | -26.0       | 1.00 H             | 205                  | 11.70            | 36.30                    |
| 6   | 4924.00     | 32.7 AV                 | 54.0           | -21.3       | 1.00 H             | 205                  | -3.60            | 36.30                    |
| 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    | 108.3 PK                |                |             | 1.45 V             | 116                  | 77.60            | 30.70                    |
| 2   | *2462.00    | 96.8 AV                 |                |             | 1.45 V             | 116                  | 66.10            | 30.70                    |
| 3   | 2483.50     | 64.9 PK                 | 74.0           | -9.1        | 1.13 V             | 116                  | 34.10            | 30.80                    |
| 4   | 2483.50     | 48.8 AV                 | 54.0           | -5.2        | 1.13 V             | 116                  | 18.00            | 30.80                    |
| 5   | 4924.00     | 50.0 PK                 | 74.0           | -24.0       | 1.28 V             | 177                  | 13.70            | 36.30                    |
| 6   | 4924.00     | 34.7 AV                 | 54.0           | -19.3       | 1.28 V             | 177                  | -1.60            | 36.30                    |

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



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IEEE802.11n (OBW=20MHz), data rate: 13Mbps

| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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     | 67.5 PK                 | 74.0           | -6.5        | 1.31 H             | 24                   | 37.00            | 30.50                    |
| 2   | 2390.00     | 50.1 AV                 | 54.0           | -3.9        | 1.31 H             | 24                   | 19.60            | 30.50                    |
| 3   | *2412.00    | 109.9 PK                |                |             | 1.32 H             | 23                   | 79.30            | 30.60                    |
| 4   | *2412.00    | 97.4 AV                 |                |             | 1.32 H             | 23                   | 66.80            | 30.60                    |
| 5   | 4824.00     | 47.9 PK                 | 74.0           | -26.1       | 1.00 H             | 207                  | 11.80            | 36.10                    |
| 6   | 4824.00     | 32.9 AV                 | 54.0           | -21.1       | 1.00 H             | 207                  | -3.20            | 36.10                    |

| 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     | 66.7 PK                 | 74.0           | -7.3        | 1.18 V             | 115                  | 36.20            | 30.50                    |
| 2   | 2390.00     | 48.6 AV                 | 54.0           | -5.4        | 1.18 V             | 115                  | 18.10            | 30.50                    |
| 3   | *2412.00    | 109.2 PK                |                |             | 1.18 V             | 117                  | 78.60            | 30.60                    |
| 4   | *2412.00    | 96.8 AV                 |                |             | 1.18 V             | 117                  | 66.20            | 30.60                    |
| 5   | 4824.00     | 51.0 PK                 | 74.0           | -23.0       | 1.21 V             | 187                  | 14.90            | 36.10                    |
| 6   | 4824.00     | 35.6 AV                 | 54.0           | -18.4       | 1.21 V             | 187                  | -0.50            | 36.10                    |

- 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.





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| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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    | 111.1 PK                |                |             | 1.32 H             | 19                   | 80.50            | 30.60                    |
| 2   | *2437.00    | 98.6 AV                 |                |             | 1.32 H             | 19                   | 68.00            | 30.60                    |
| 3   | 4874.00     | 48.4 PK                 | 74.0           | -25.6       | 1.00 H             | 208                  | 12.20            | 36.20                    |
| 4   | 4874.00     | 33.1 AV                 | 54.0           | -20.9       | 1.00 H             | 208                  | -3.10            | 36.20                    |
| 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    | 110.4 PK                |                |             | 1.16 V             | 118                  | 79.80            | 30.60                    |
| 2   | *2437.00    | 98.1 AV                 |                |             | 1.16 V             | 118                  | 67.50            | 30.60                    |
| 3   | 4874.00     | 52.1 PK                 | 74.0           | -21.9       | 1.20 V             | 184                  | 15.90            | 36.20                    |
| 4   | 4874.00     | 36.9 AV                 | 54.0           | -17.1       | 1.20 V             | 184                  | 0.70             | 36.20                    |

- 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.



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| 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 | 26deg. C, 65%RH<br>1008 hPa | TESTED BY          | Frank Wang                |

| 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    | 110.5 PK                |                |             | 1.31 H             | 22                   | 79.80            | 30.70                    |
| 2   | *2462.00    | 98.0 AV                 |                |             | 1.31 H             | 22                   | 67.30            | 30.70                    |
| 3   | 2483.50     | 66.6 PK                 | 74.0           | -7.4        | 1.25 H             | 21                   | 35.80            | 30.80                    |
| 4   | 2483.50     | 49.8 AV                 | 54.0           | -4.2        | 1.25 H             | 21                   | 19.00            | 30.80                    |
| 5   | 4924.00     | 46.8 PK                 | 74.0           | -27.2       | 1.00 H             | 204                  | 10.50            | 36.30                    |
| 6   | 4924.00     | 33.2 AV                 | 54.0           | -20.8       | 1.00 H             | 204                  | -3.10            | 36.30                    |
| 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    | 109.8 PK                |                |             | 1.14 V             | 117                  | 79.10            | 30.70                    |
| 2   | *2462.00    | 97.5 AV                 |                |             | 1.14 V             | 117                  | 66.80            | 30.70                    |
| 3   | 2483.50     | 62.2 PK                 | 74.0           | -11.8       | 1.12 V             | 118                  | 31.40            | 30.80                    |
| 4   | 2483.50     | 48.2 AV                 | 54.0           | -5.8        | 1.12 V             | 118                  | 17.40            | 30.80                    |
| 5   | 4924.00     | 49.7 PK                 | 74.0           | -24.3       | 1.31 V             | 184                  | 13.40            | 36.30                    |
| 6   | 4924.00     | 34.5 AV                 | 54.0           | -19.5       | 1.31 V             | 184                  | -1.80            | 36.30                    |

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



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**BELOW 1GHz WORST-CASE DATA : IEEE802.11n (OBW=20MHz), data rate: 13Mbps**

| 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<br>1012 hPa | TESTED BY          | Frank Wang    |

| 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   | 158.22      | 35.6 QP                 | 43.5           | -7.9        | 1.00 H             | 91                   | 21.00            | 14.60                    |
| 2   | 250.00      | 43.2 QP                 | 46.0           | -2.8        | 1.14 H             | 84                   | 30.40            | 12.80                    |
| 3   | 288.49      | 37.7 QP                 | 46.0           | -8.3        | 1.00 H             | 229                  | 23.50            | 14.20                    |
| 4   | 500.42      | 42.0 QP                 | 46.0           | -4.0        | 2.00 H             | 172                  | 22.20            | 19.80                    |
| 5   | 601.52      | 40.4 QP                 | 46.0           | -5.6        | 1.25 H             | 331                  | 18.40            | 22.00                    |
| 6   | 751.23      | 37.1 QP                 | 46.0           | -8.9        | 1.00 H             | 226                  | 13.00            | 24.10                    |

| 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   | 51.29       | 36.9 QP                 | 40.0           | -3.1        | 1.00 V             | 331                  | 22.60            | 14.30                    |
| 2   | 249.60      | 37.7 QP                 | 46.0           | -8.3        | 1.00 V             | 280                  | 24.90            | 12.80                    |
| 3   | 500.42      | 35.4 QP                 | 46.0           | -10.6       | 1.50 V             | 61                   | 15.60            | 19.80                    |
| 4   | 626.80      | 39.1 QP                 | 46.0           | -6.9        | 1.50 V             | 154                  | 16.70            | 22.40                    |
| 5   | 751.23      | 36.2 QP                 | 46.0           | -9.8        | 1.00 V             | 175                  | 12.10            | 24.10                    |
| 6   | 834.84      | 40.3 QP                 | 46.0           | -5.7        | 2.00 V             | 31                   | 15.20            | 25.10                    |

- 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.



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## 4.2 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

| FREQUENCY OF EMISSION (MHz) | CONDUCTED LIMIT (dB $\mu$ V) |          |
|-----------------------------|------------------------------|----------|
|                             | 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<br>ROHDE & SCHWARZ | ESCS30              | 100291         | Dec. 16, 2009       | Dec. 15, 2010           |
| RF signal cable<br>Woken         | 5D-FB               | Cable-HYC01-01 | Dec. 30, 2009       | Dec. 29, 2010           |
| LISN<br>ROHDE & SCHWARZ          | ESH3-Z5             | 100312         | Jun. 28, 2010       | Jun. 27, 2011           |
| LISN<br>ROHDE & SCHWARZ          | ESH3-Z5             | 835239/001     | Feb. 10, 2010       | Feb. 09, 2011           |
| V-LISN<br>SCHWARZBECK            | NNBL 8226-2         | 8226-142       | Jul. 12, 2010       | Jul. 11, 2011           |
| Software<br>ADT                  | ADT_Cond_<br>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 1.  
3. The VCCI Site Registration No. is C-2040.



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#### 4.2.3 TEST PROCEDURES

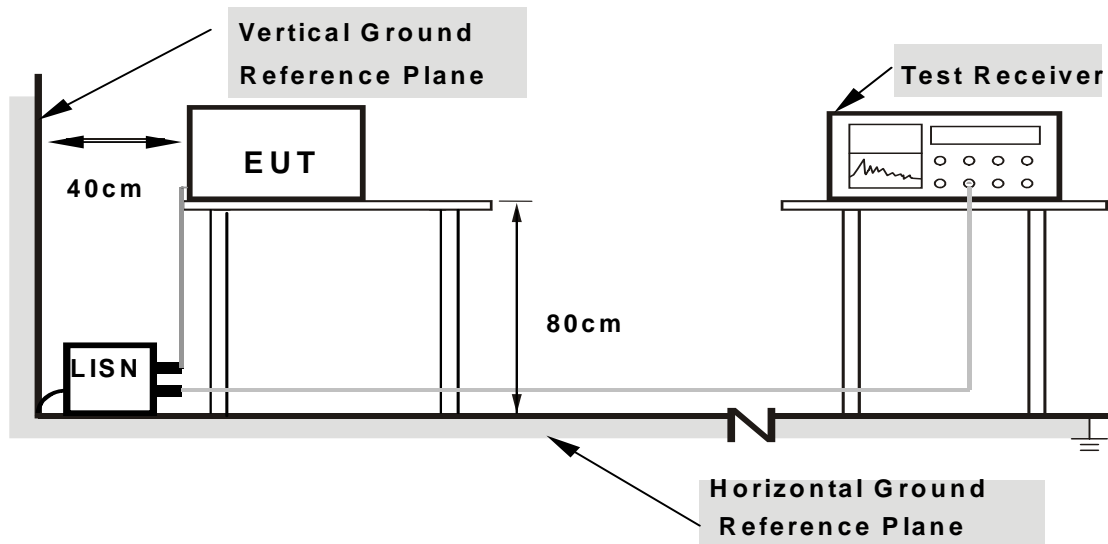
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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 cm 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.

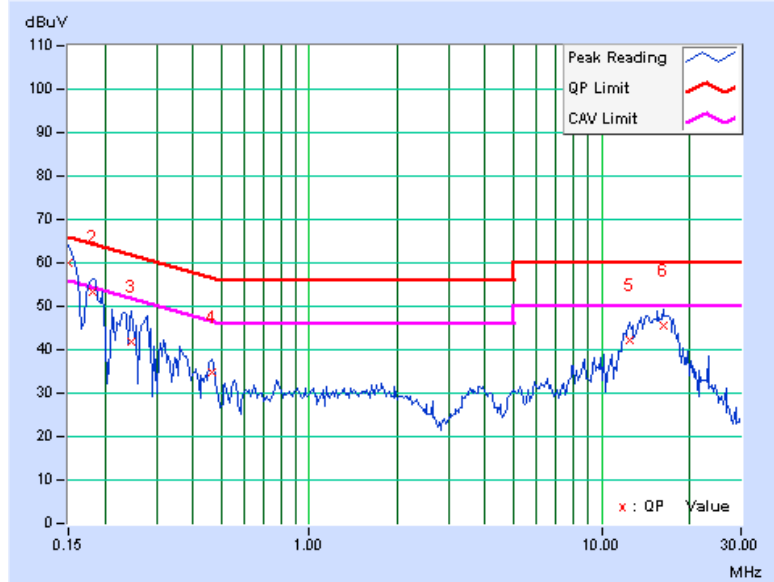
### 4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : IEEE802.11n (OBW=20MHz), data rate: 13Mbps

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

| No | Freq. [MHz] | Corr. Factor (dB) | Reading Value [dB (uV)] |       | Emission Level [dB (uV)] |       | Limit [dB (uV)] |       | Margin (dB) |        |
|----|-------------|-------------------|-------------------------|-------|--------------------------|-------|-----------------|-------|-------------|--------|
|    |             |                   | Q.P.                    | AV.   | Q.P.                     | AV.   | Q.P.            | AV.   | Q.P.        | AV.    |
| 1  | 0.150       | 0.12              | 59.73                   | 44.61 | 59.85                    | 44.73 | 66.00           | 56.00 | -6.15       | -11.27 |
| 2  | 0.181       | 0.11              | 53.05                   | -     | 53.16                    | -     | 64.43           | 54.43 | -11.26      | -      |
| 3  | 0.248       | 0.11              | 41.90                   | -     | 42.01                    | -     | 61.84           | 51.84 | -19.82      | -      |
| 4  | 0.466       | 0.14              | 34.50                   | -     | 34.64                    | -     | 56.58           | 46.58 | -21.94      | -      |
| 5  | 12.504      | 0.85              | 41.28                   | -     | 42.13                    | -     | 60.00           | 50.00 | -17.87      | -      |
| 6  | 16.230      | 1.16              | 44.57                   | -     | 45.73                    | -     | 60.00           | 50.00 | -14.27      | -      |

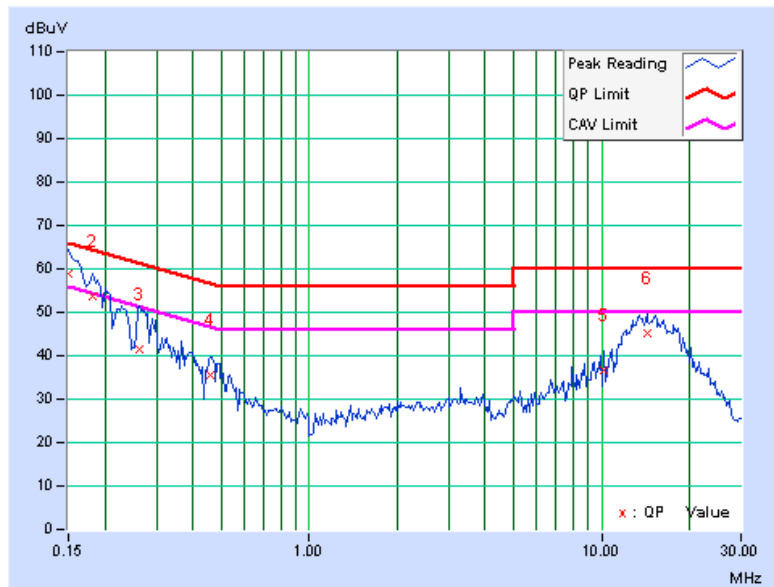
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value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



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

| No | Freq.<br>[MHz] | Corr.<br>Factor<br>(dB) | Reading Value<br>[dB (uV)] |       | Emission Level<br>[dB (uV)] |       | Limit<br>[dB (uV)] |       | Margin<br>(dB) |        |
|----|----------------|-------------------------|----------------------------|-------|-----------------------------|-------|--------------------|-------|----------------|--------|
|    |                |                         | Q.P.                       | AV.   | Q.P.                        | AV.   | Q.P.               | AV.   | Q.P.           | AV.    |
| 1  | 0.150          | 0.10                    | 58.89                      | 42.40 | 58.99                       | 42.50 | 66.00              | 56.00 | -7.01          | -13.50 |
| 2  | 0.181          | 0.10                    | 53.59                      | -     | 53.69                       | -     | 64.43              | 54.43 | -10.74         | -      |
| 3  | 0.263          | 0.11                    | 41.25                      | -     | 41.36                       | -     | 61.33              | 51.33 | -19.97         | -      |
| 4  | 0.459          | 0.12                    | 35.31                      | -     | 35.43                       | -     | 56.72              | 46.72 | -21.28         | -      |
| 5  | 10.242         | 0.58                    | 36.24                      | -     | 36.82                       | -     | 60.00              | 50.00 | -23.18         | -      |
| 6  | 14.273         | 0.87                    | 44.28                      | -     | 45.15                       | -     | 60.00              | 50.00 | -14.85         | -      |

- 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          | FSP40     | 100039     | Jan. 11, 2010       | Jan. 10, 2011           |

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

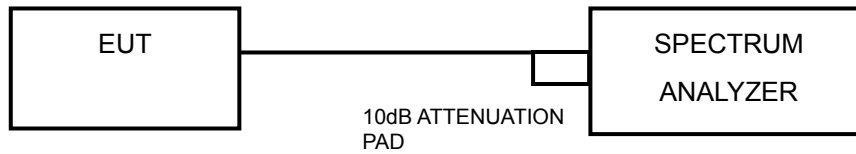
#### 4.3.3 TEST PROCEDURE

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

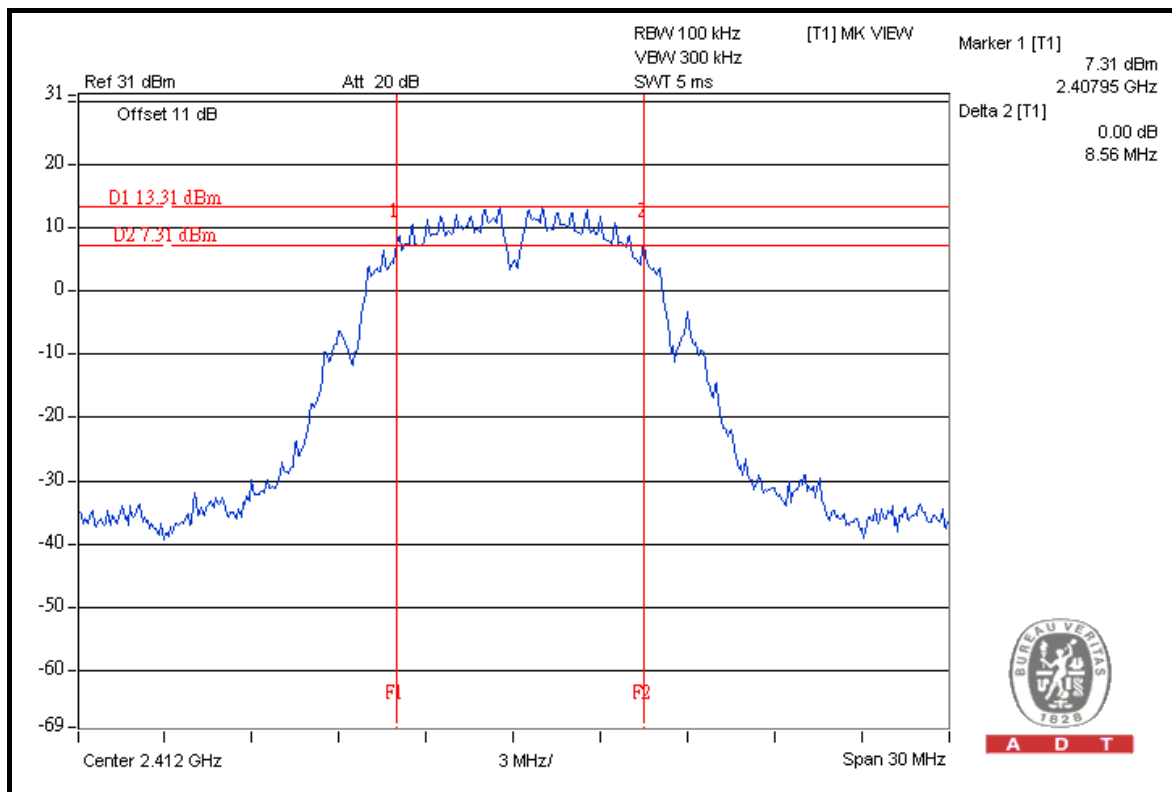
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

### 4.3.7 TEST RESULTS

#### IEEE802.11b, data rate: 1Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------------------|-------------|
| 1       | 2412                    | 8.56                | 0.5                 | PASS        |
| 6       | 2437                    | 8.14                | 0.5                 | PASS        |
| 11      | 2462                    | 8.07                | 0.5                 | PASS        |

#### CH 1



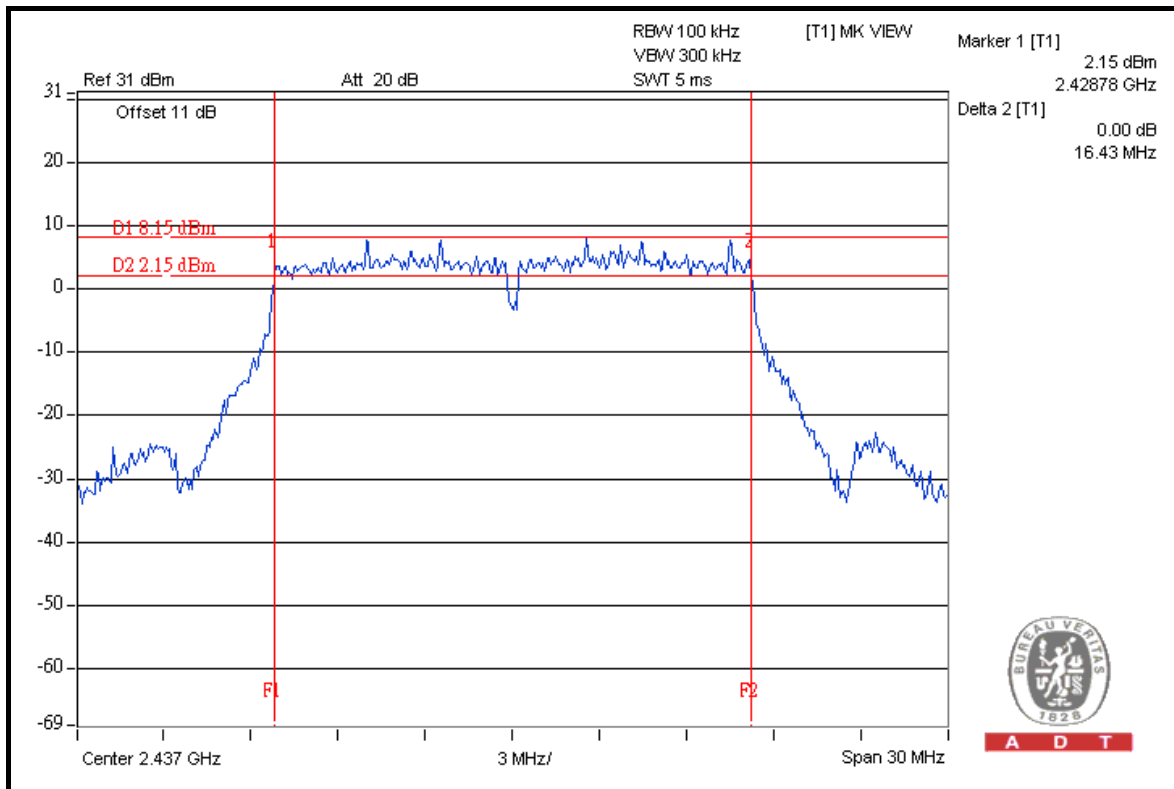


A D T

### IEEE802.11g, data rate: 6.0Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------------------|-------------|
| 1       | 2412                    | 16.40               | 0.5                 | PASS        |
| 6       | 2437                    | 16.43               | 0.5                 | PASS        |
| 11      | 2462                    | 16.43               | 0.5                 | PASS        |

### CH 6



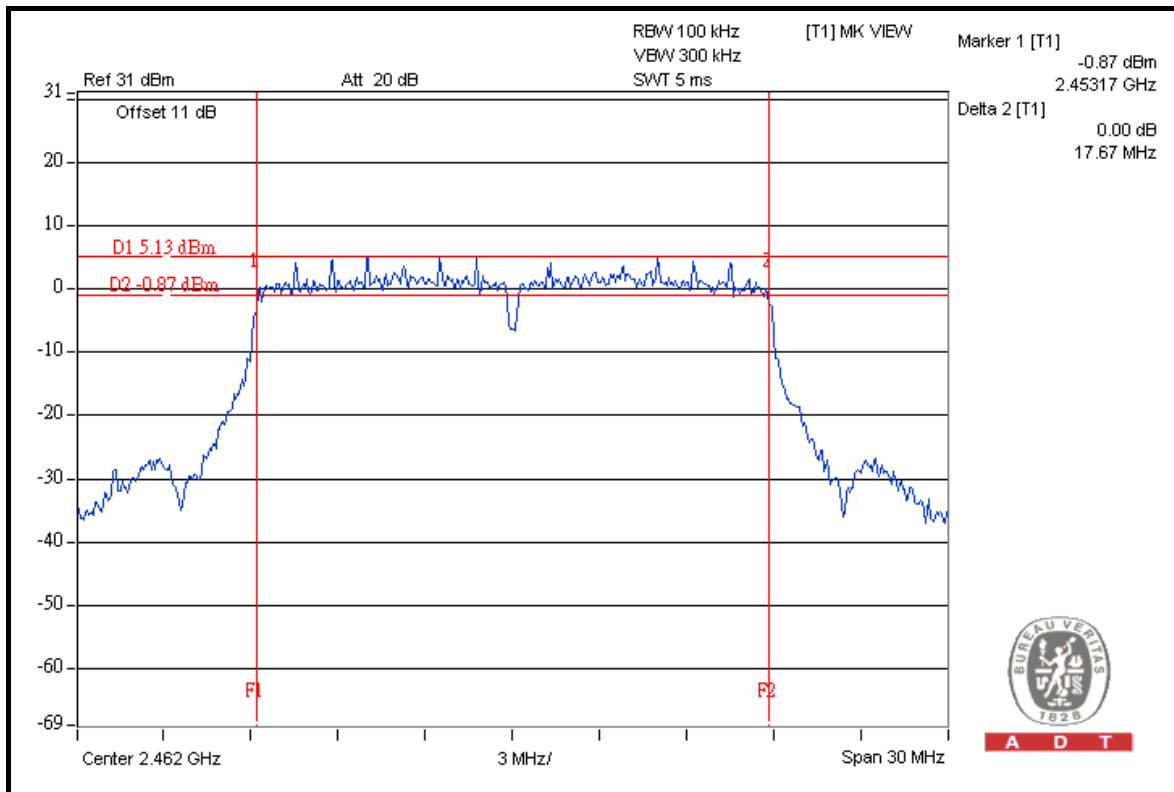


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IEEE802.11n (OBW=20MHz), data rate: 6.5Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------------------|-------------|
| 1       | 2412                    | 17.62               | 0.5                 | PASS        |
| 6       | 2437                    | 17.66               | 0.5                 | PASS        |
| 11      | 2462                    | 17.67               | 0.5                 | PASS        |

CH 11



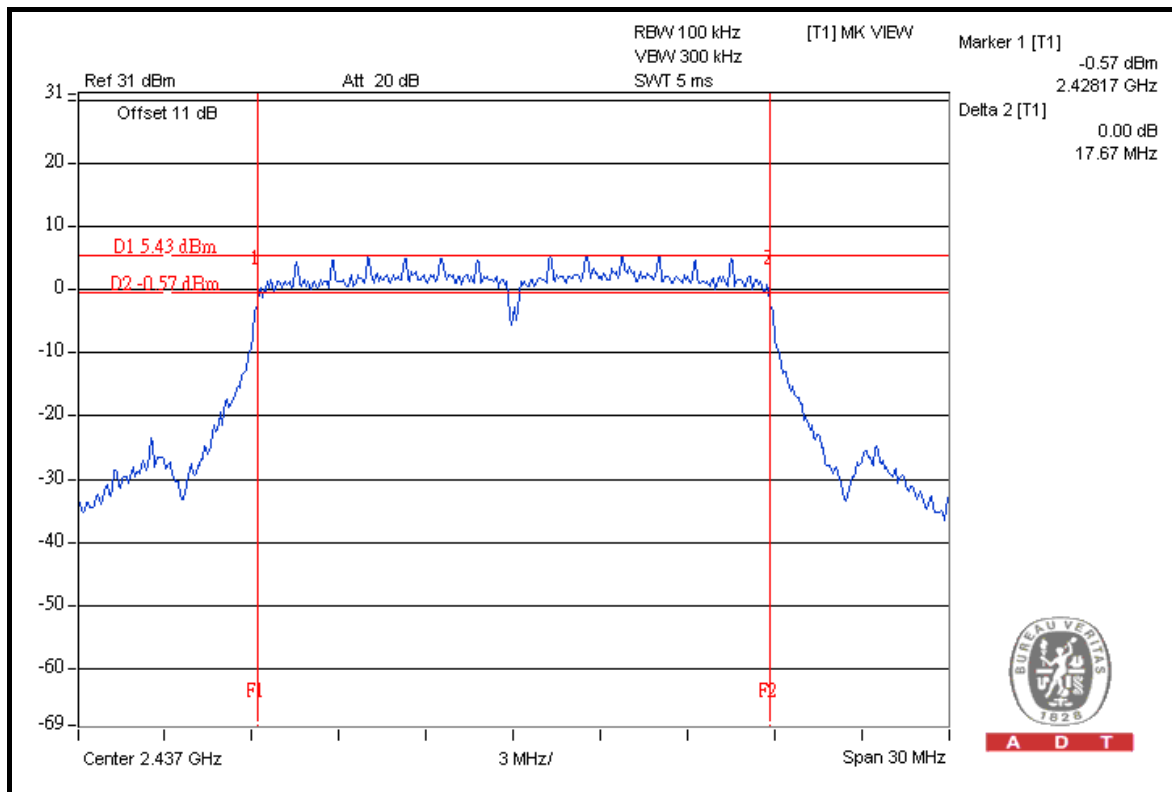


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IEEE802.11n (OBW=20MHz), data rate: 13Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) |         | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------|---------------------|-------------|
|         |                         | CHAIN 0             | CHAIN 1 |                     |             |
| 1       | 2412                    | 17.61               | 17.62   | 0.5                 | PASS        |
| 6       | 2437                    | 17.67               | 17.66   | 0.5                 | PASS        |
| 11      | 2462                    | 17.67               | 17.67   | 0.5                 | PASS        |

CHAIN 0: 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 |
|-----------------------------|-----------|------------|---------------------|-------------------------|
| High Speed Peak Power Meter | ML2495A   | 0842014    | Apr. 21, 2010       | Apr. 20, 2011           |
| Power Sensor                | MA2411B   | 0738404    | Apr. 21, 2010       | Apr. 20, 2011           |

**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. Measurement Bandwidth of ML2495A is 65MHz greater than 6dB bandwidth of emission.

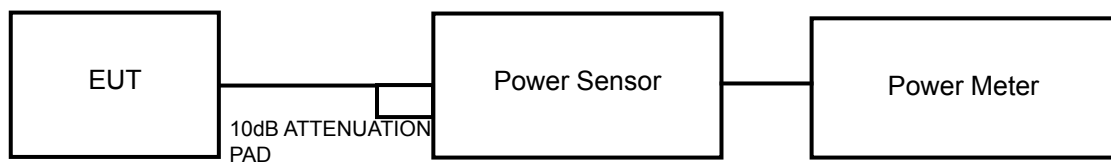
##### 4.4.3 TEST PROCEDURES

A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. 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

##### IEEE802.11b, data rate: 1Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | POWER OUTPUT (mW) | POWER OUTPUT (dBm) | POWER LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|-------------------|--------------------|-------------------|-----------|
| 1       | 2412                    | 436.5             | 26.4               | 30                | PASS      |
| 6       | 2437                    | 467.7             | 26.7               | 30                | PASS      |
| 11      | 2462                    | 398.1             | 26.0               | 30                | PASS      |

##### IEEE802.11g, data rate: 6.0Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | POWER OUTPUT (mW) | POWER OUTPUT (dBm) | POWER LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|-------------------|--------------------|-------------------|-----------|
| 1       | 2412                    | 275.4             | 24.4               | 30                | PASS      |
| 6       | 2437                    | 602.6             | 27.8               | 30                | PASS      |
| 11      | 2462                    | 380.2             | 25.8               | 30                | PASS      |

##### IEEE802.11n (OBW=20MHz), data rate: 6.5Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | POWER OUTPUT (mW) | POWER OUTPUT (dBm) | POWER LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|-------------------|--------------------|-------------------|-----------|
| 1       | 2412                    | 371.5             | 25.7               | 30                | PASS      |
| 6       | 2437                    | 758.6             | 28.8               | 30                | PASS      |
| 11      | 2462                    | 398.1             | 26.0               | 30                | PASS      |

##### IEEE802.11n (OBW=20MHz), data rate: 13Mbps

| CHAN. | CHAN. FREQ. (MHz) | POWER OUTPUT (dBm) |         | TOTAL POWER (mW) | TOTAL POWER (dBm) | POWER LIMIT (dBm) | PASS / FAIL |
|-------|-------------------|--------------------|---------|------------------|-------------------|-------------------|-------------|
|       |                   | CHAIN 0            | CHAIN 1 |                  |                   |                   |             |
| 1     | 2412              | 25.2               | 24.6    | 619.5            | 27.9              | 30                | PASS        |
| 6     | 2437              | 26.2               | 25.5    | 771.7            | 28.9              | 30                | PASS        |
| 11    | 2462              | 25.4               | 25.0    | 663.0            | 28.2              | 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. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|----------------------------|-----------|------------|---------------------|-------------------------|
| SPECTRUM ANALYZER          | FSP40     | 100039     | Jan. 11, 2010       | Jan. 10, 2011           |

**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

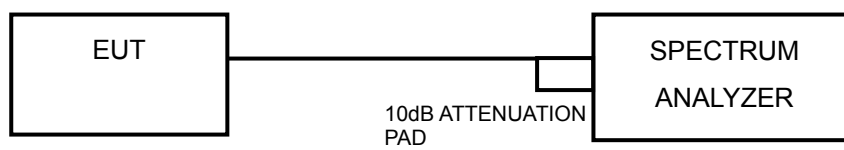
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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



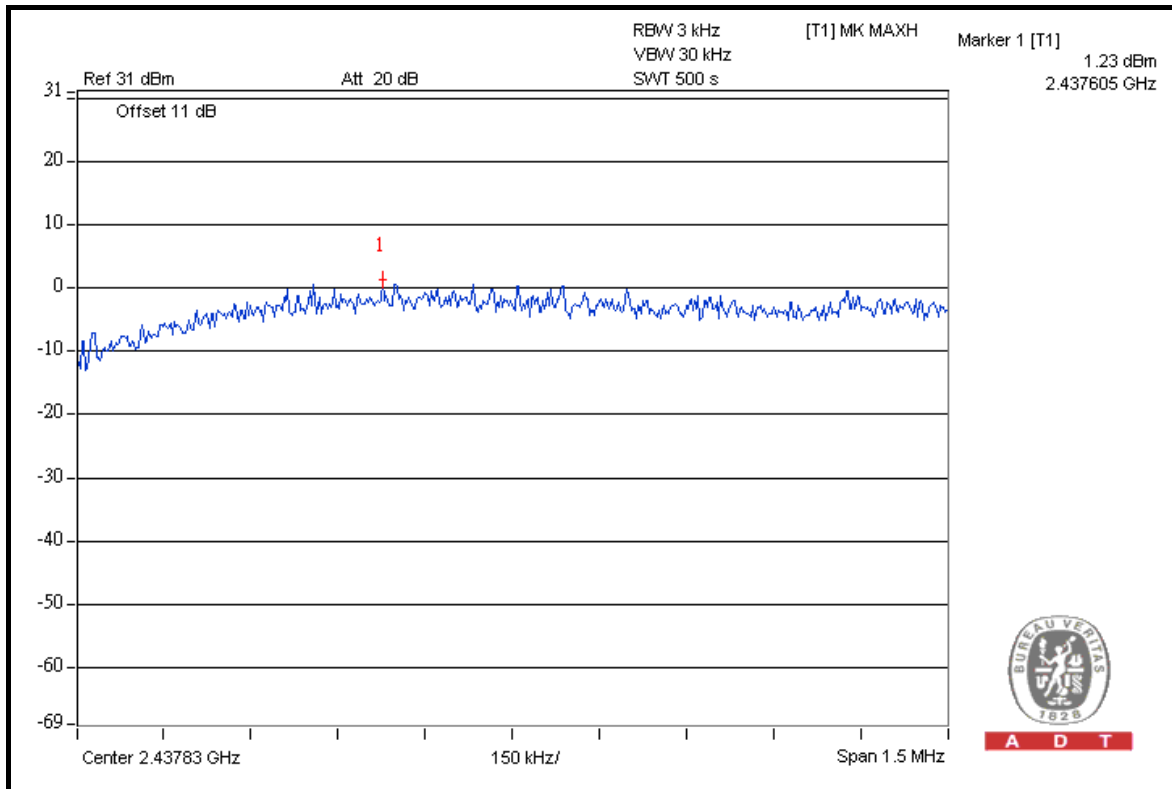
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## 4.5.7 TEST RESULTS

### IEEE802.11b, data rate: 1Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3 kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|----------------------------------|---------------------|-----------|
| 1       | 2412                    | 0.8                              | 8                   | PASS      |
| 6       | 2437                    | 1.2                              | 8                   | PASS      |
| 11      | 2462                    | 0.2                              | 8                   | PASS      |

### CH 6



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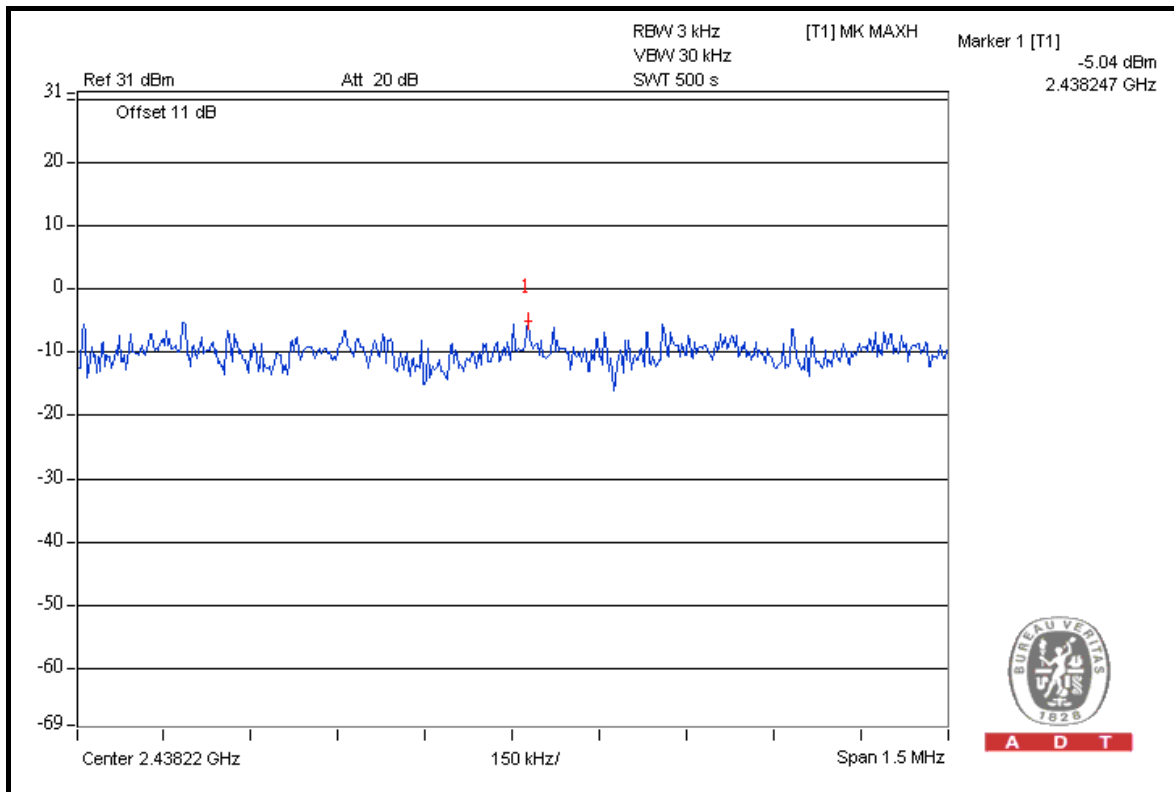


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IEEE802.11g, data rate: 6.0Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3 kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|----------------------------------|---------------------|-----------|
| 1       | 2412                    | -8.6                             | 8                   | PASS      |
| 6       | 2437                    | -5.0                             | 8                   | PASS      |
| 11      | 2462                    | -7.3                             | 8                   | PASS      |

CH 6



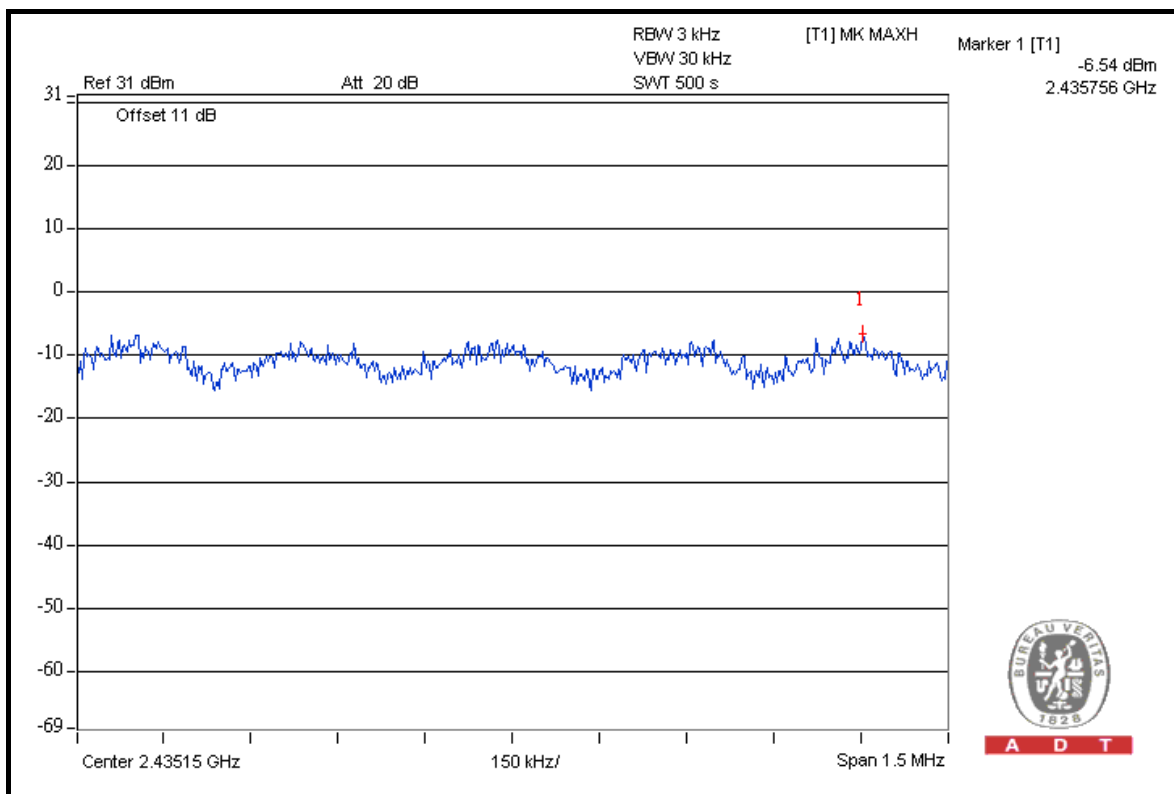


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IEEE802.11n (OBW=20MHz), data rate: 6.5Mbps

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3 kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|----------------------------------|---------------------|-----------|
| 1       | 2412                    | -9.8                             | 8                   | PASS      |
| 6       | 2437                    | -6.5                             | 8                   | PASS      |
| 11      | 2462                    | -9.6                             | 8                   | PASS      |

CH 6



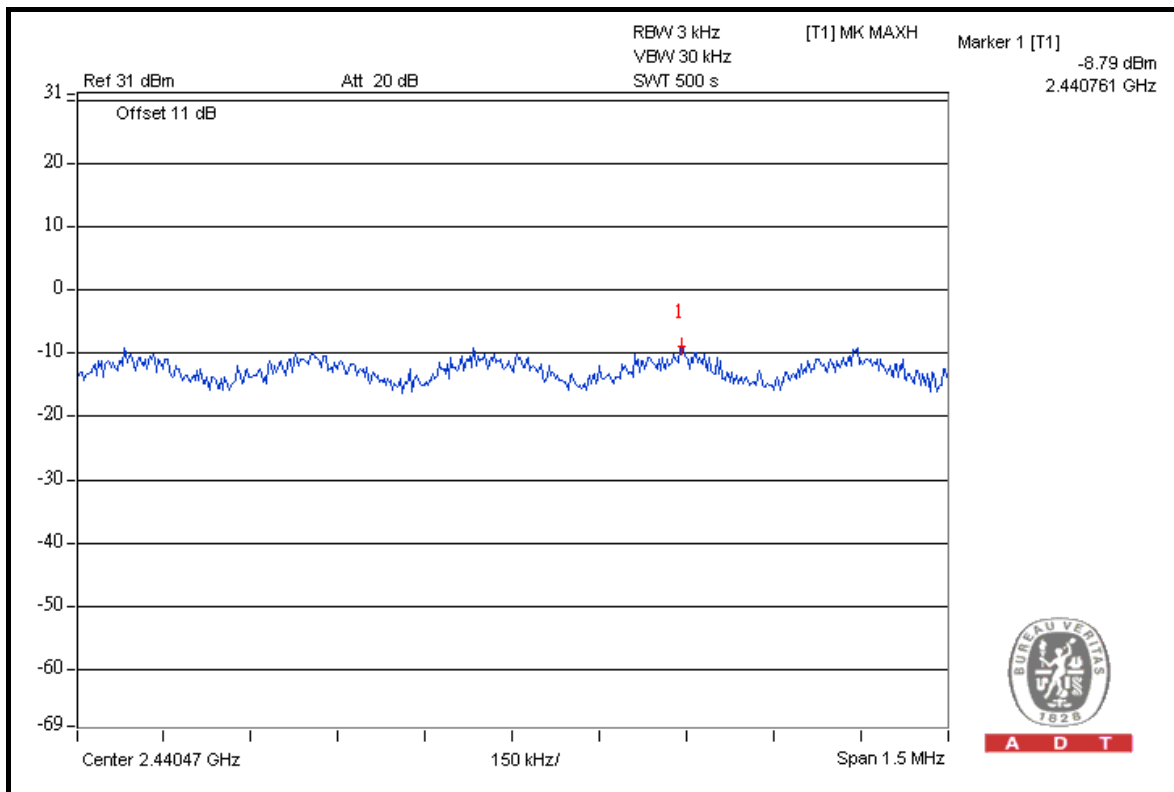


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IEEE802.11n (OBW=20MHz), data rate: 13Mbps

| CHAN. | CHAN. FREQ. (MHz) | RF POWER LEVEL IN 3kHz BW (dBm) |         | TOTAL POWER DENSITY (dBm) | MAX. LIMIT (dBm) | PASS / FAIL |
|-------|-------------------|---------------------------------|---------|---------------------------|------------------|-------------|
|       |                   | CHAIN 0                         | CHAIN 1 |                           |                  |             |
| 1     | 2412              | -9.9                            | -11.3   | -7.5                      | 8                | PASS        |
| 6     | 2437              | -8.8                            | -10.4   | -6.5                      | 8                | PASS        |
| 11    | 2462              | -9.7                            | -10.7   | -7.2                      | 8                | PASS        |

CHAIN 0: CH 6



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## 4.6 BAND EDGES MEASUREMENT

### 4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

### 4.6.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER              | MODEL NO.                    | SERIAL NO.  | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|---|------------------------------|-------------|---------------------|-------------------------|
| <b>FOR CONDUCTED MEASUREMENT</b>        |                              |             |                     |                         |
| SPECTRUM ANALYZER                       | FSP40                        | 100039      | Jan. 11, 2010       | Jan. 10, 2011           |
| <b>FOR RADIATED MEASUREMENT</b>         |                              |             |                     |                         |
| Test Receiver<br>ROHDE & SCHWARZ        | ESIB7                        | 100188      | Dec. 21, 2009       | Dec. 20, 2010           |
| Spectrum Analyzer<br>ROHDE & SCHWARZ    | FSP40                        | 100269      | Dec. 31, 2009       | Dec. 30, 2010           |
| BILOG Antenna<br>SCHWARZBECK            | VULB9168                     | 9168-160    | Apr. 27, 2010       | Apr. 26, 2011           |
| HORN Antenna<br>SCHWARZBECK             | 9120D                        | 9120D-405   | Feb. 03, 2010       | Feb. 02, 2011           |
| HORN Antenna<br>SCHWARZBECK             | BBHA 9170                    | BBHA9170243 | Dec. 25, 2009       | Dec. 24, 2010           |
| Preamplifier<br>Agilent                 | 8449B                        | 3008A01910  | Sep. 09, 2010       | Sep. 08, 2011           |
| Preamplifier<br>Agilent                 | 8447D                        | 2944A10638  | Dec. 21, 2009       | Dec. 20, 2010           |
| RF signal cable<br>HUBER+SUHNNER        | SUCOFLEX 104                 | 238141/4    | May 14, 2010        | May 13, 2011            |
| RF signal cable<br>HUBER+SUHNNER        | SUCOFLEX 104                 | 12738/6     | May 14, 2010        | May 13, 2011            |
| Software<br>ADT.                        | ADT_Radiated_<br>V7.6.15.9.2 | NA          | NA                  | NA                      |
| Antenna Tower<br>inn-co GmbH            | MA 4000                      | 013303      | NA                  | NA                      |
| Antenna Tower Controller<br>inn-co GmbH | CO2000                       | 017303      | NA                  | NA                      |
| Turn Table<br>ADT.                      | TT100.                       | TT93021703  | NA                  | NA                      |
| Turn Table Controller<br>ADT.           | SC100.                       | SC93021703  | NA                  | NA                      |

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





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#### 4.6.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.
- f. The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz) are attached on the following pages.

**NOTE:** The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

#### 4.6.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6.



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#### 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).

#### IEEE802.11b, data rate: 1Mbps

##### 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)    | 113.6                         | 59.23      | 54.37  | 74.00          |
| 2412.00 (AV)    | 109.2                         | 60.42      | 48.78  | 54.00          |

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

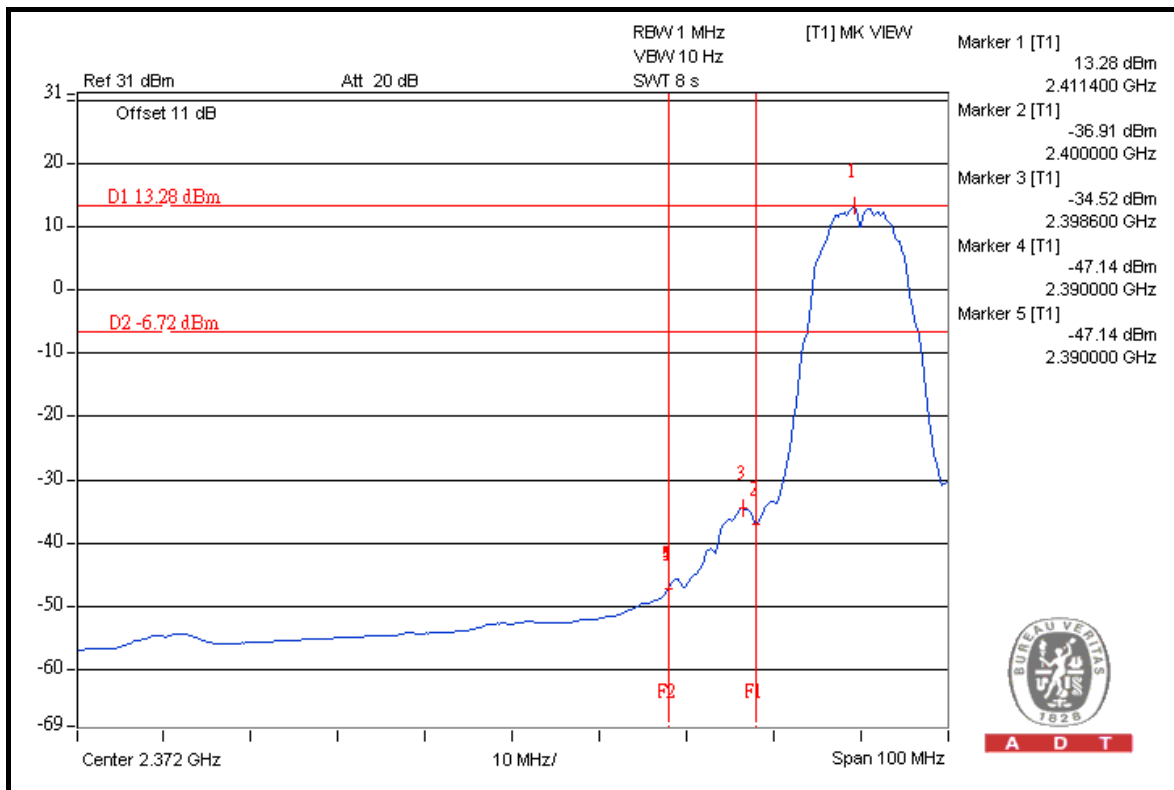
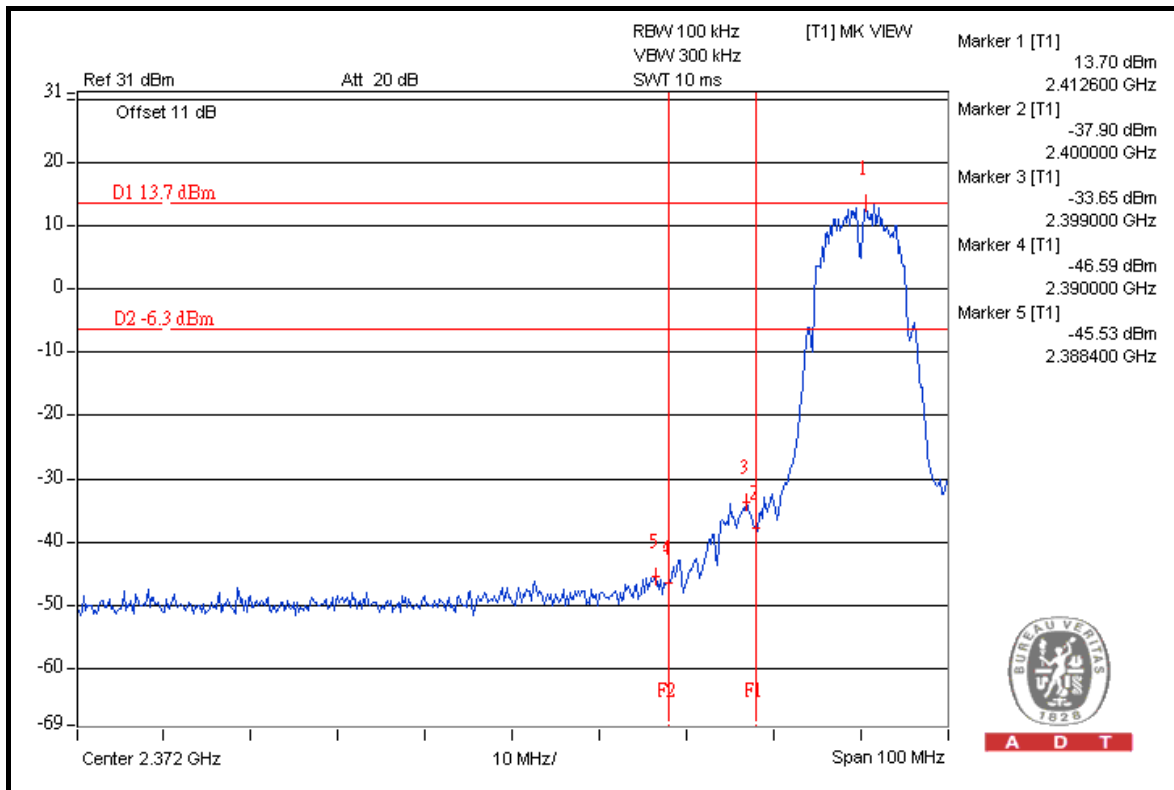
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|-----------------|-------------------------------|------------|--|----------------|
| 2462.00 (PK)    | 113.9                         | 55.31      | 58.59  | 74.00          |
| 2462.00 (AV)    | 109.3                         | 59.69      | 49.61  | 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.

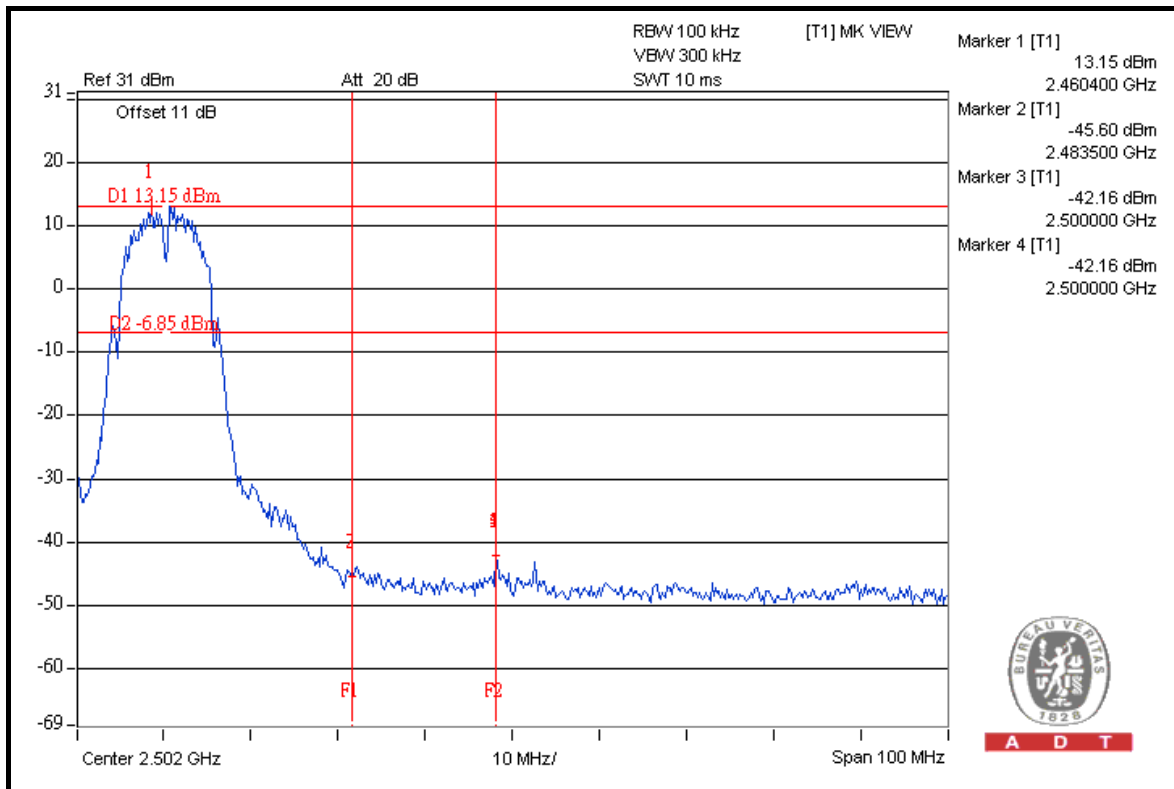
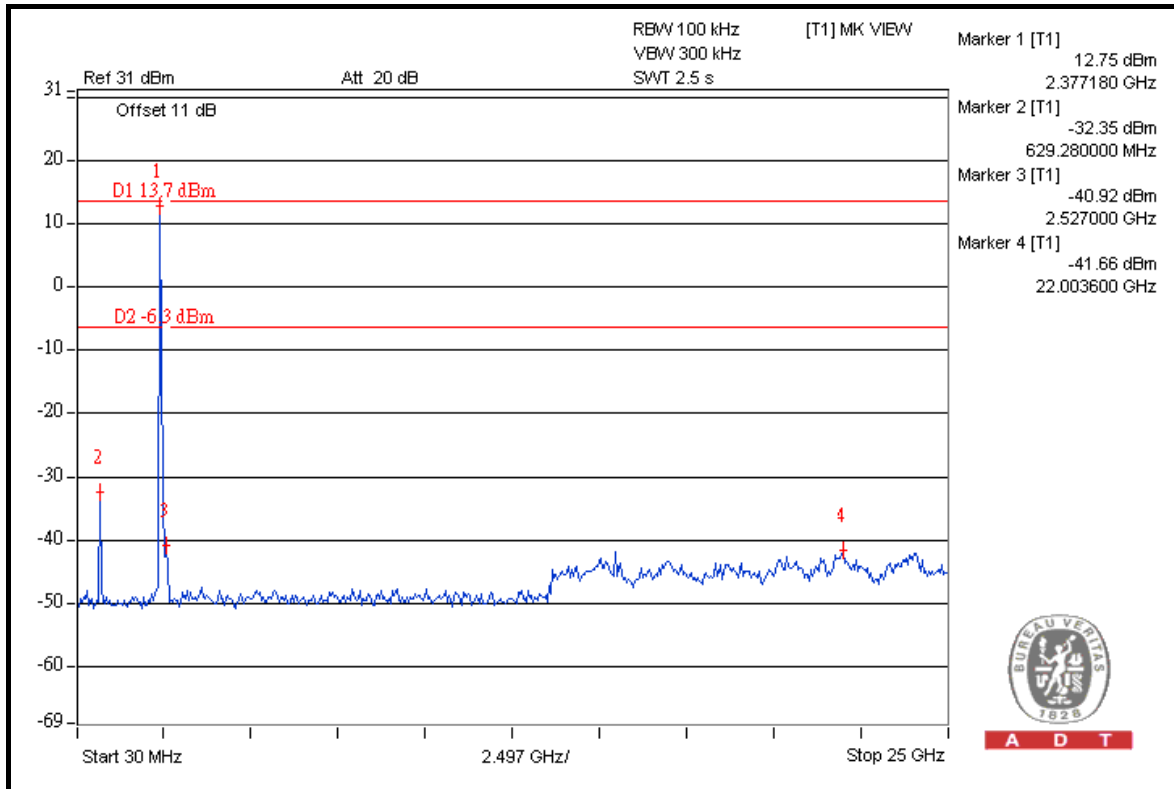


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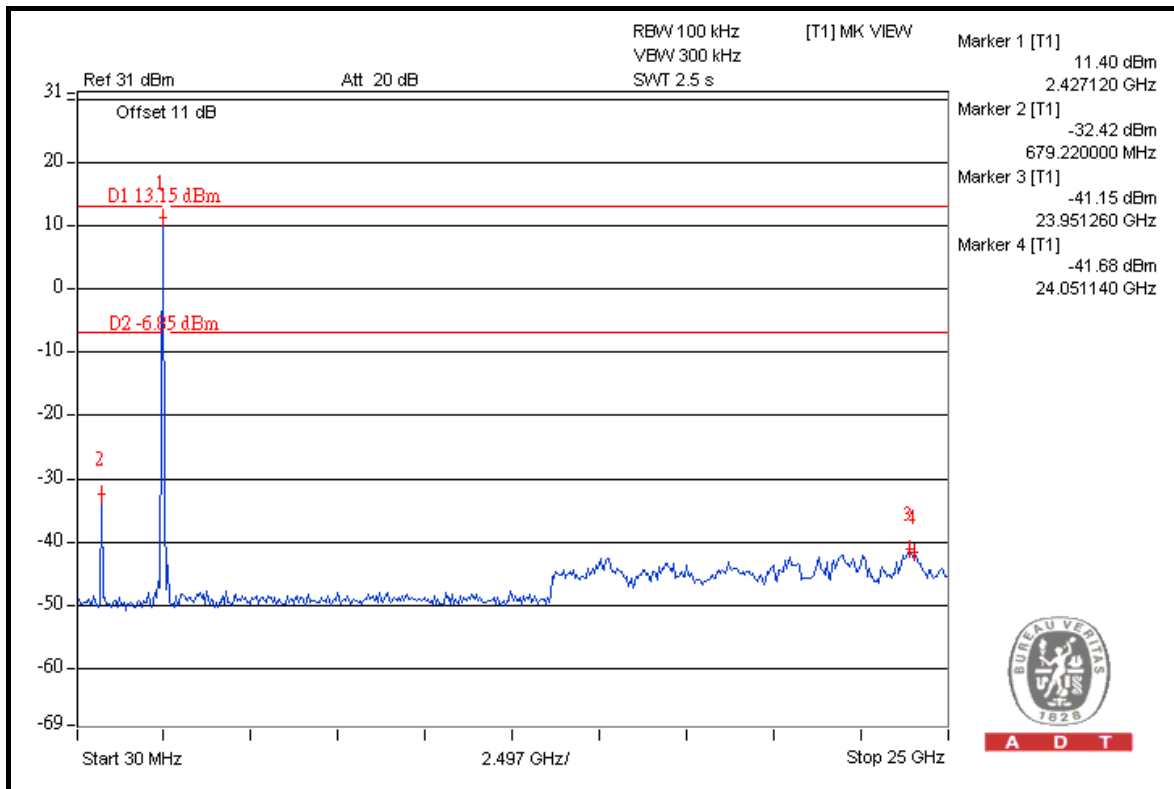
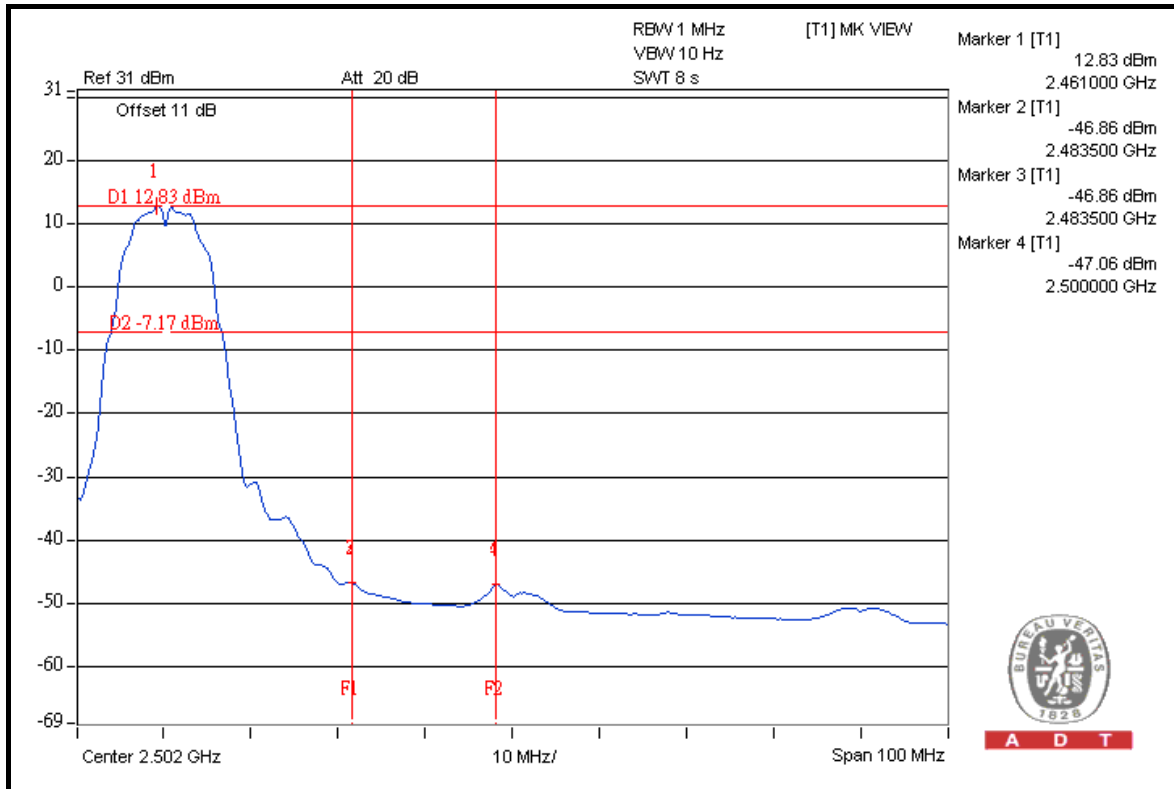


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IEEE802.11g, data rate: 6.0Mbps

**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)    | 107.4                         | 48.30      | 59.10  | 74.00          |
| 2412.00 (AV)    | 96.0                          | 51.21      | 44.79  | 54.00          |

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

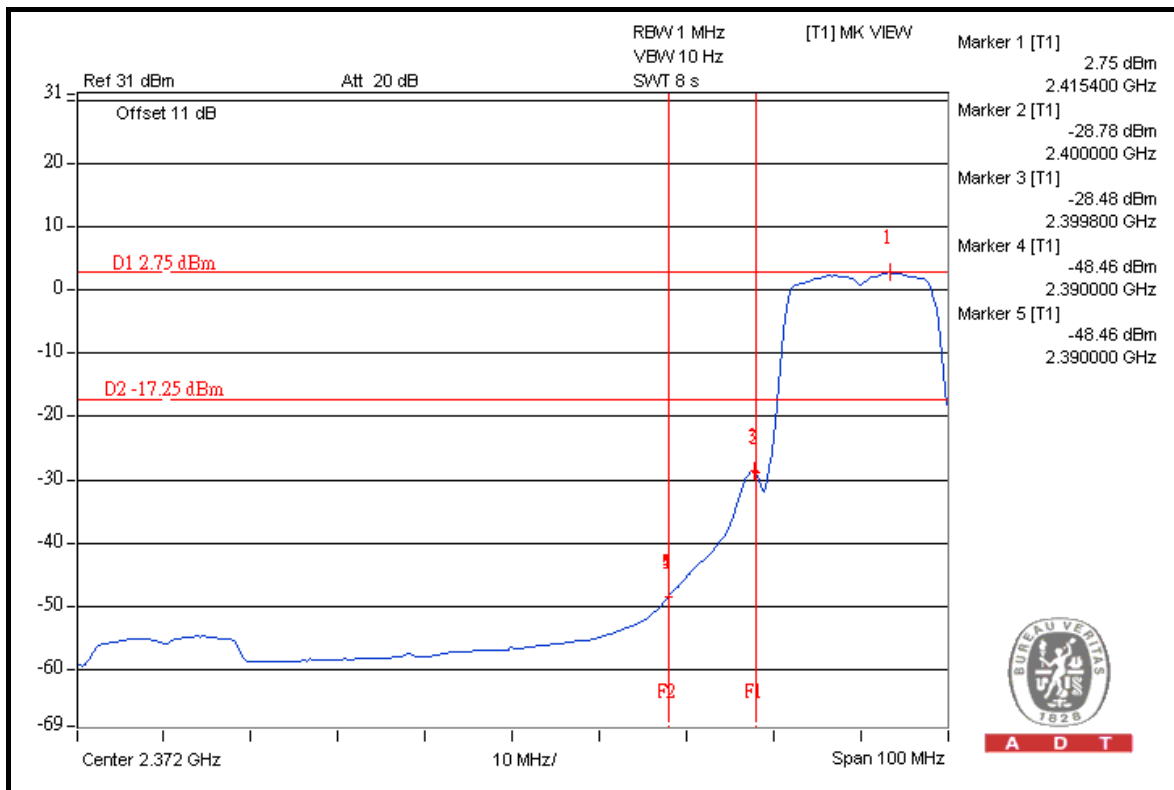
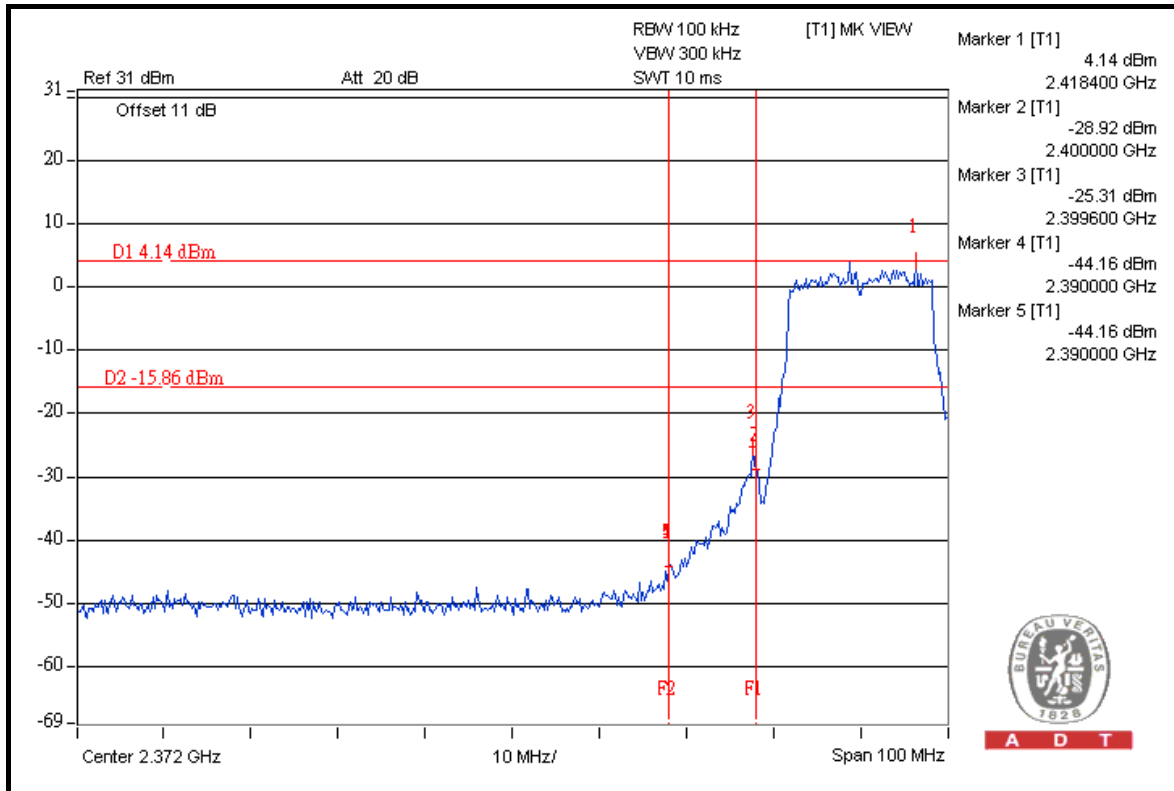
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|-----------------|-------------------------------|------------|--|----------------|
| 2462.00 (PK)    | 108.5                         | 49.75      | 58.75  | 74.00          |
| 2462.00 (AV)    | 97.1                          | 52.54      | 44.56  | 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.

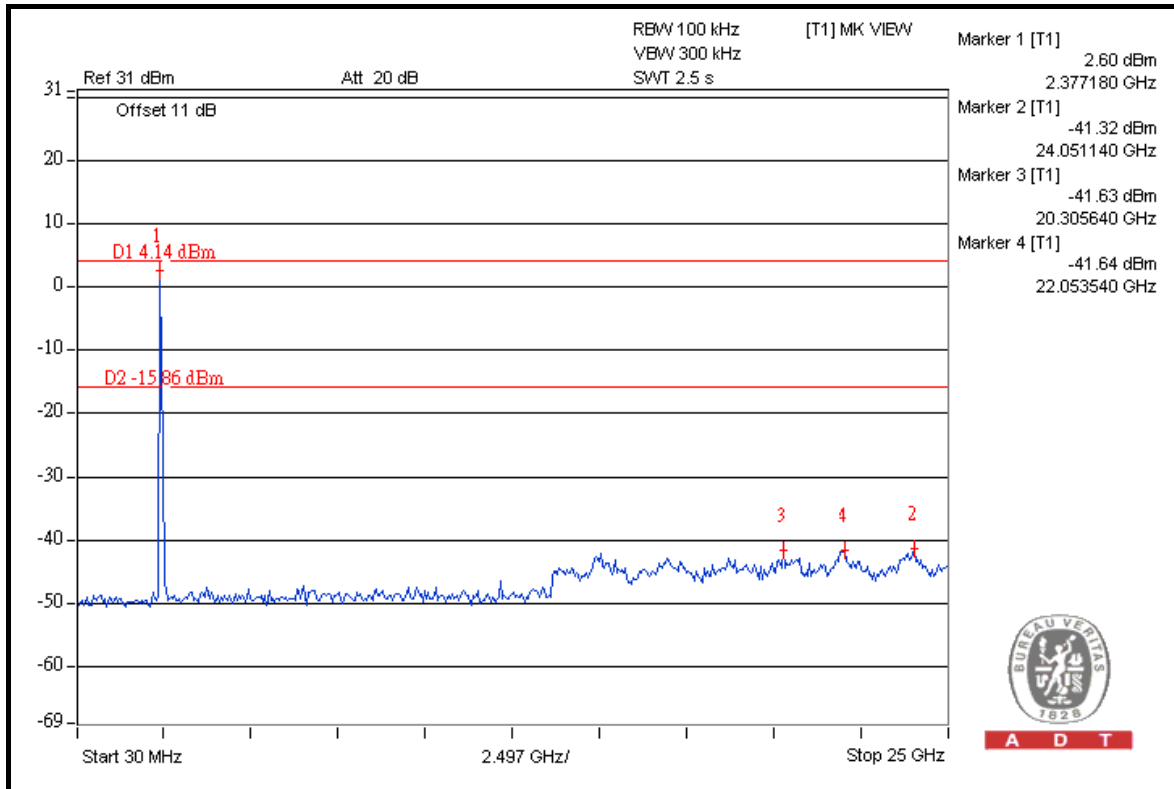


A D T

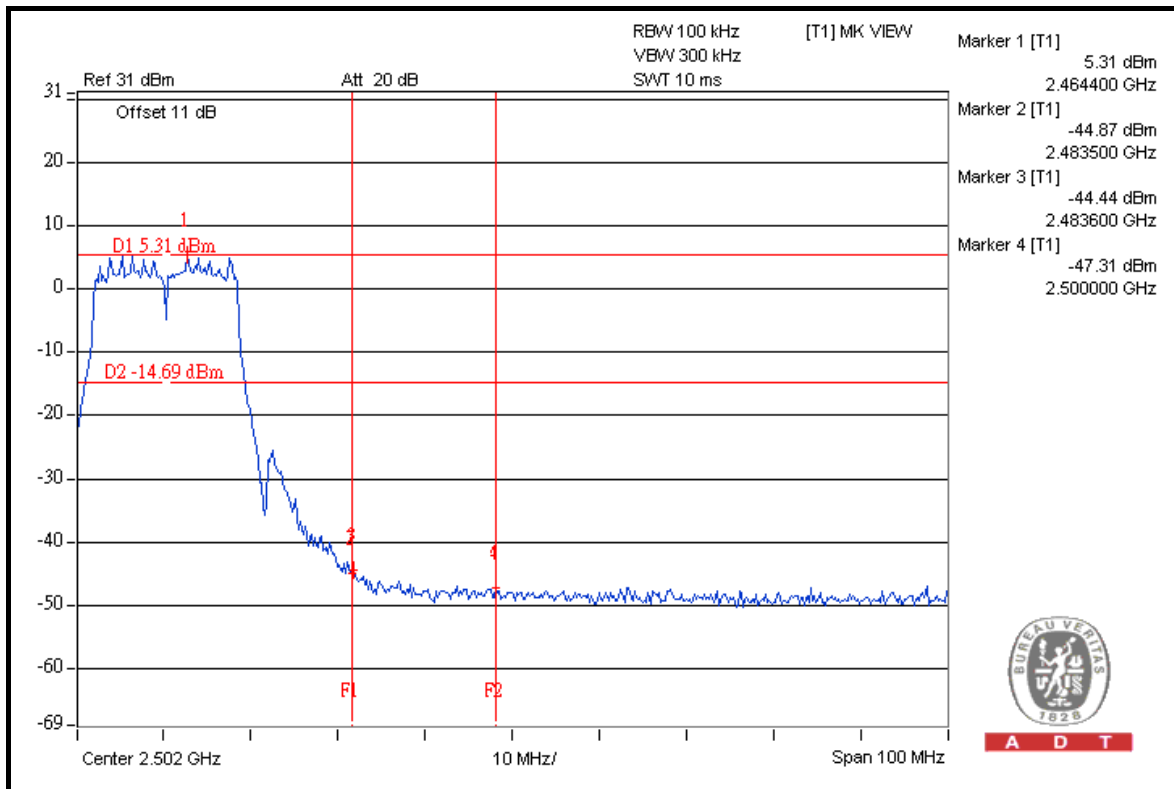




A D T



A D T

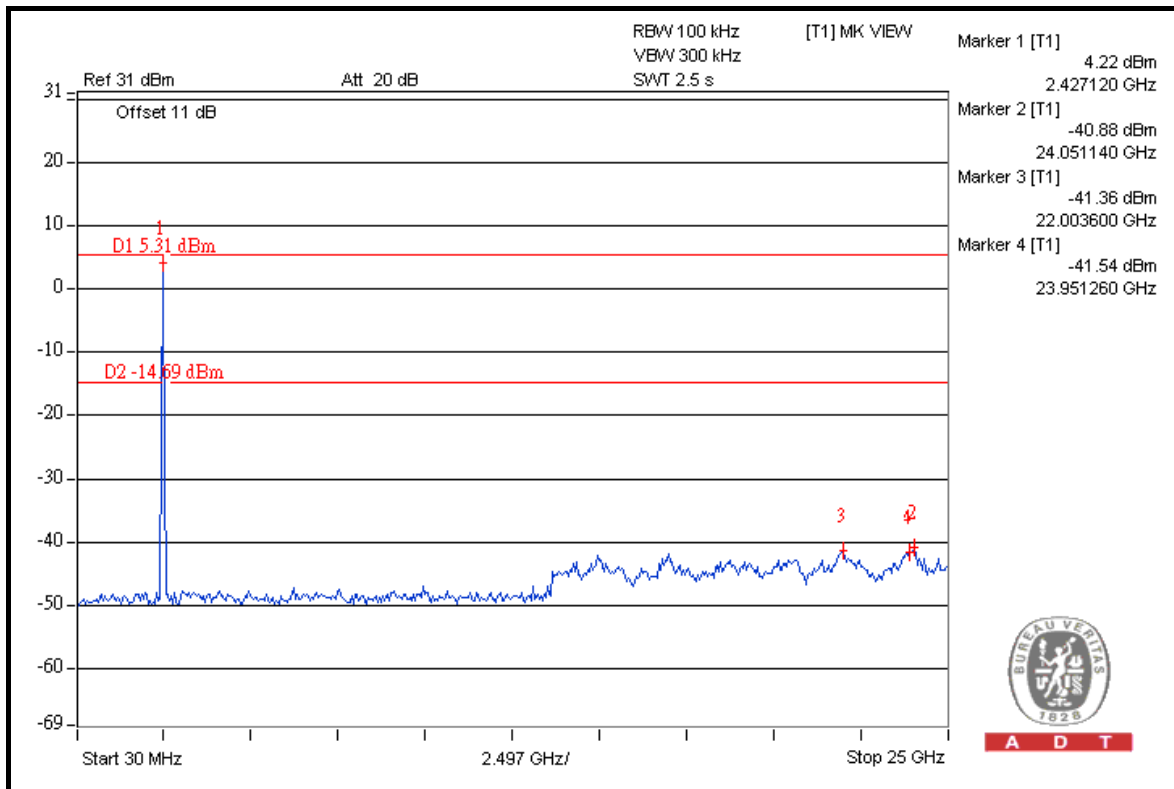
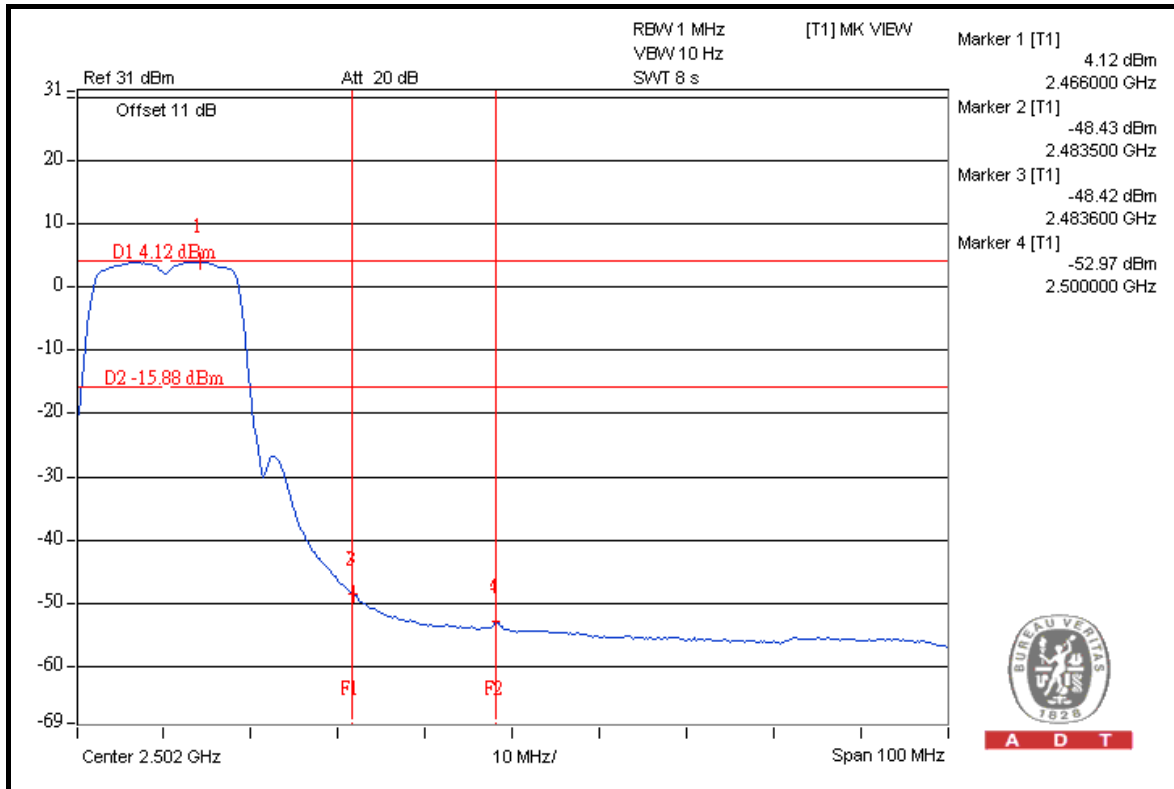


A D T





A D T





A D T

IEEE802.11n (OBW=20MHz), data rate: 6.5Mbps

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)    | 107.8                         | 46.93      | 60.87  | 74.00          |
| 2412.00 (AV)    | 96.4                          | 49.11      | 47.29  | 54.00          |

RESTRICT BAND (2483.5 ~ 2500 MHz)

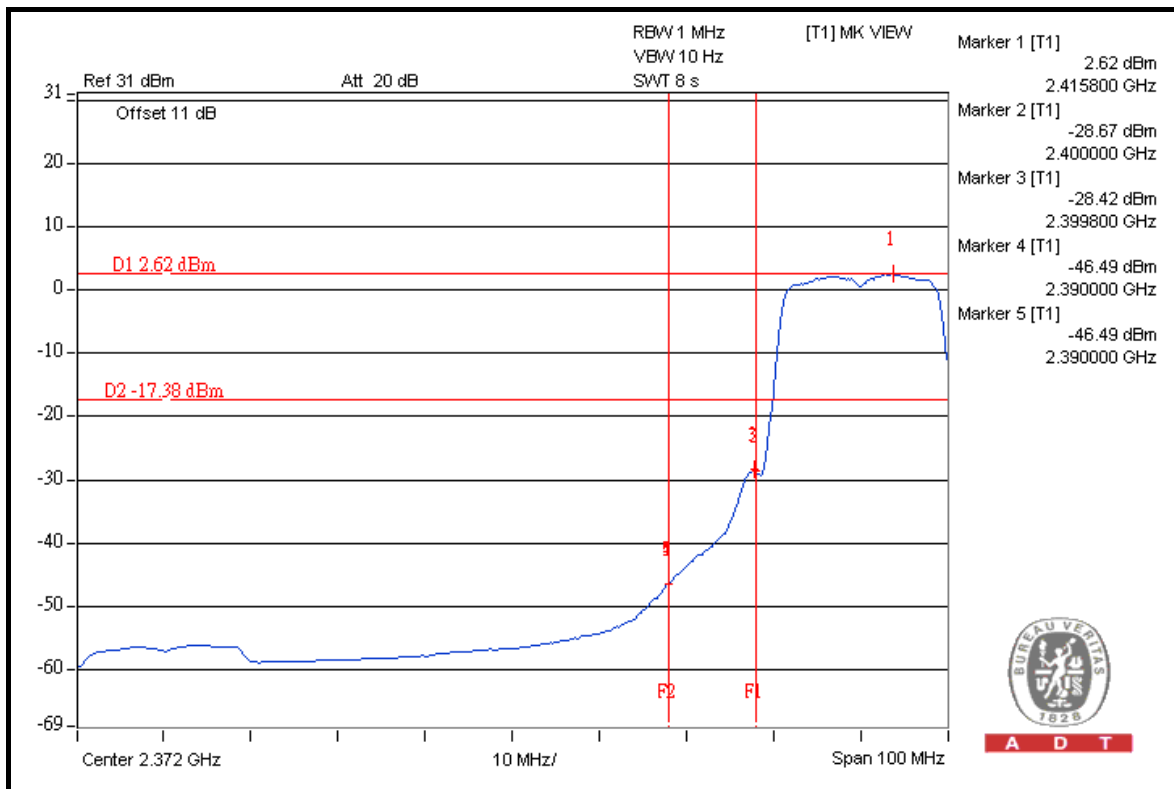
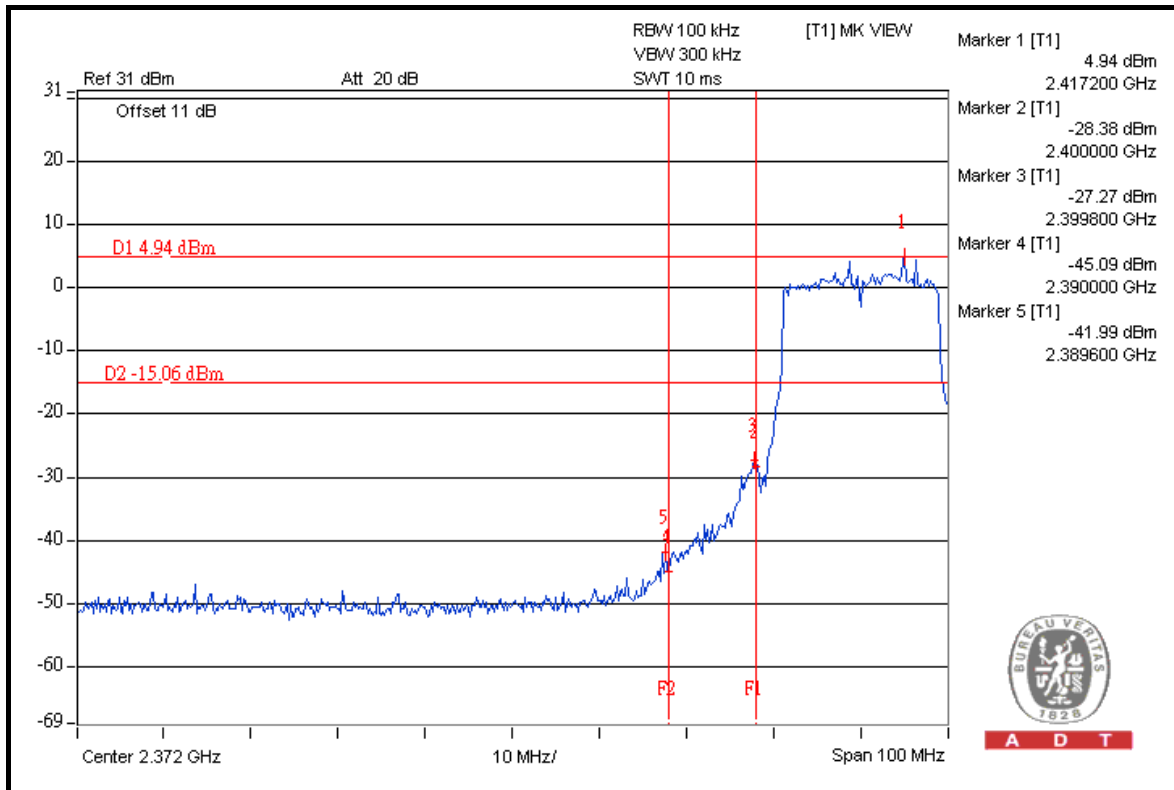
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|-----------------|-------------------------------|------------|--|----------------|
| 2462.00 (PK)    | 108.8                         | 48.12      | 60.68  | 74.00          |
| 2462.00 (AV)    | 97.4                          | 50.58      | 46.82  | 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.

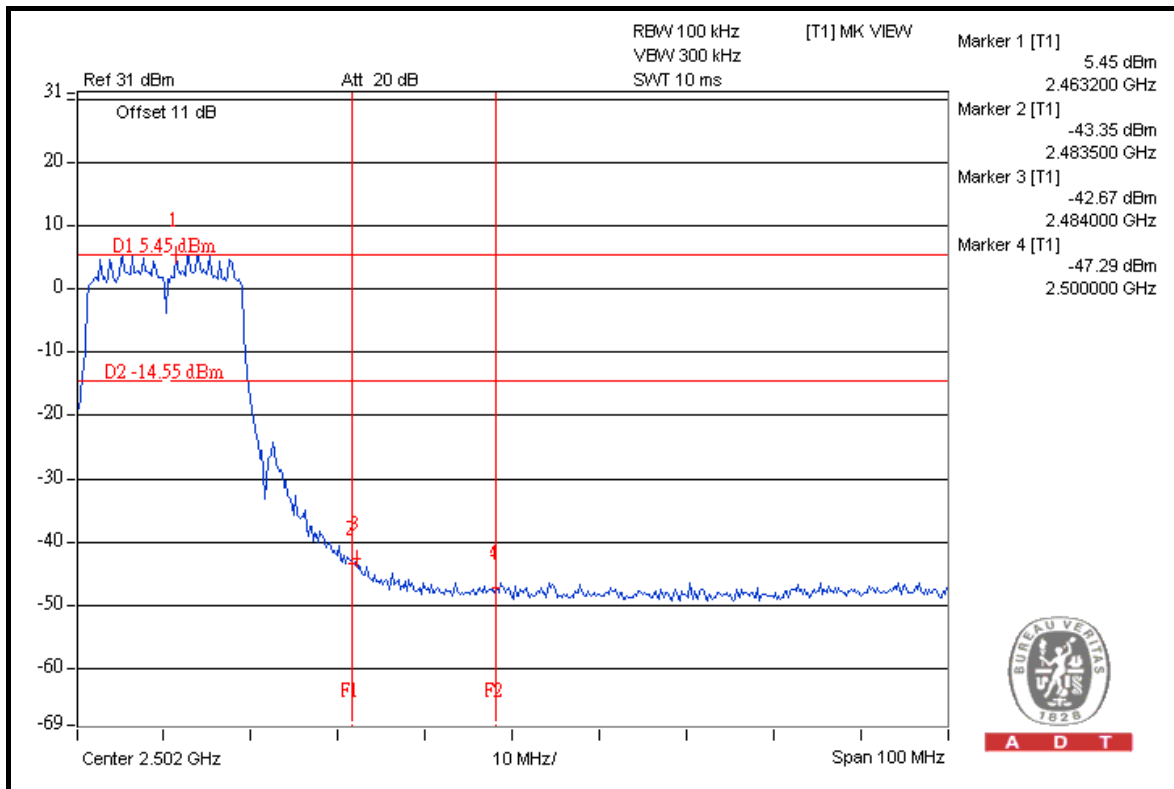
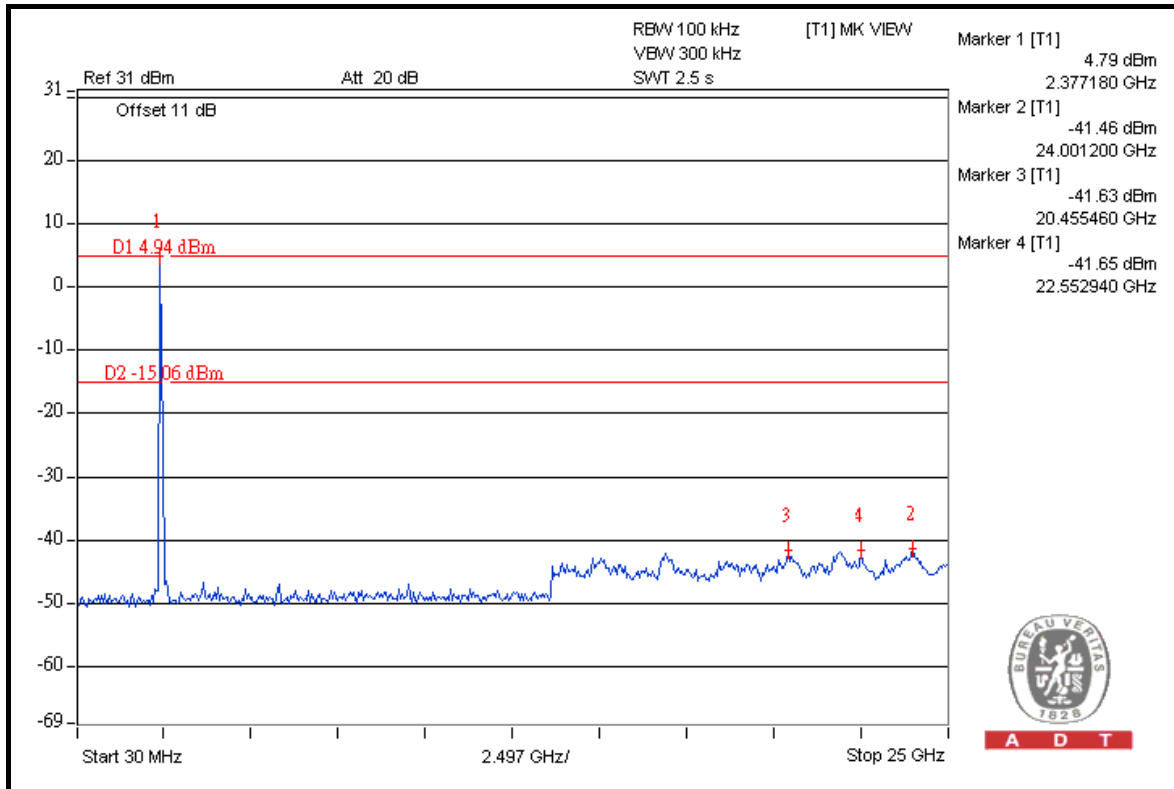


A D T



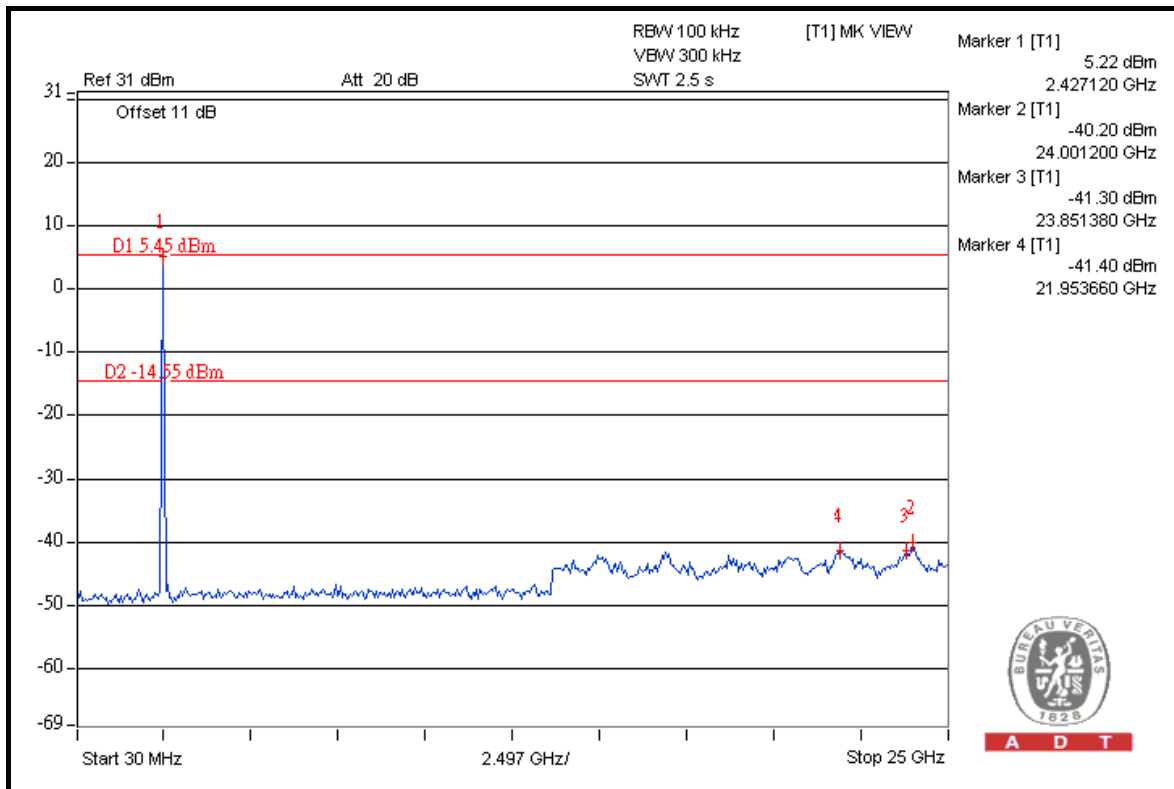
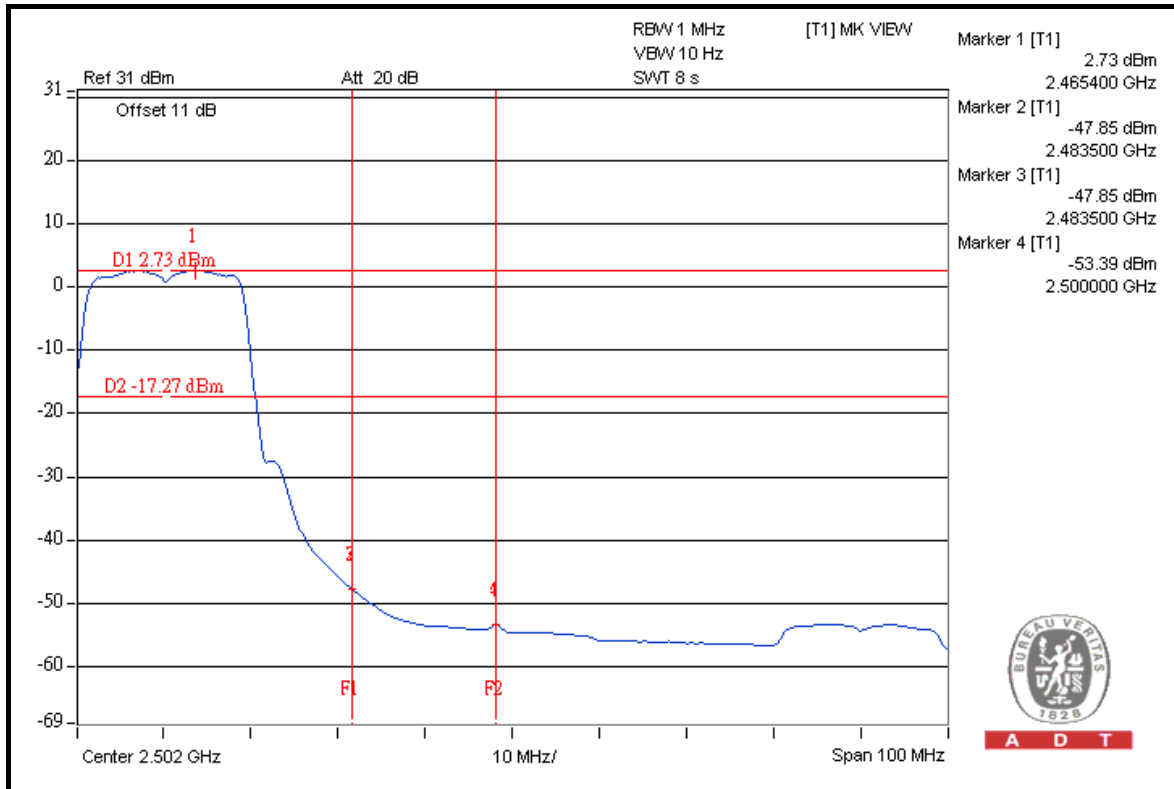


A D T





A D T





A D T

IEEE802.11n (OBW=20MHz), data rate: 13Mbps

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)    | 109.9                         | 44.97      | 64.93  | 74.00          |
| 2412.00 (AV)    | 97.4                          | 46.71      | 50.69  | 54.00          |

RESTRICT BAND (2483.5 ~ 2500 MHz)

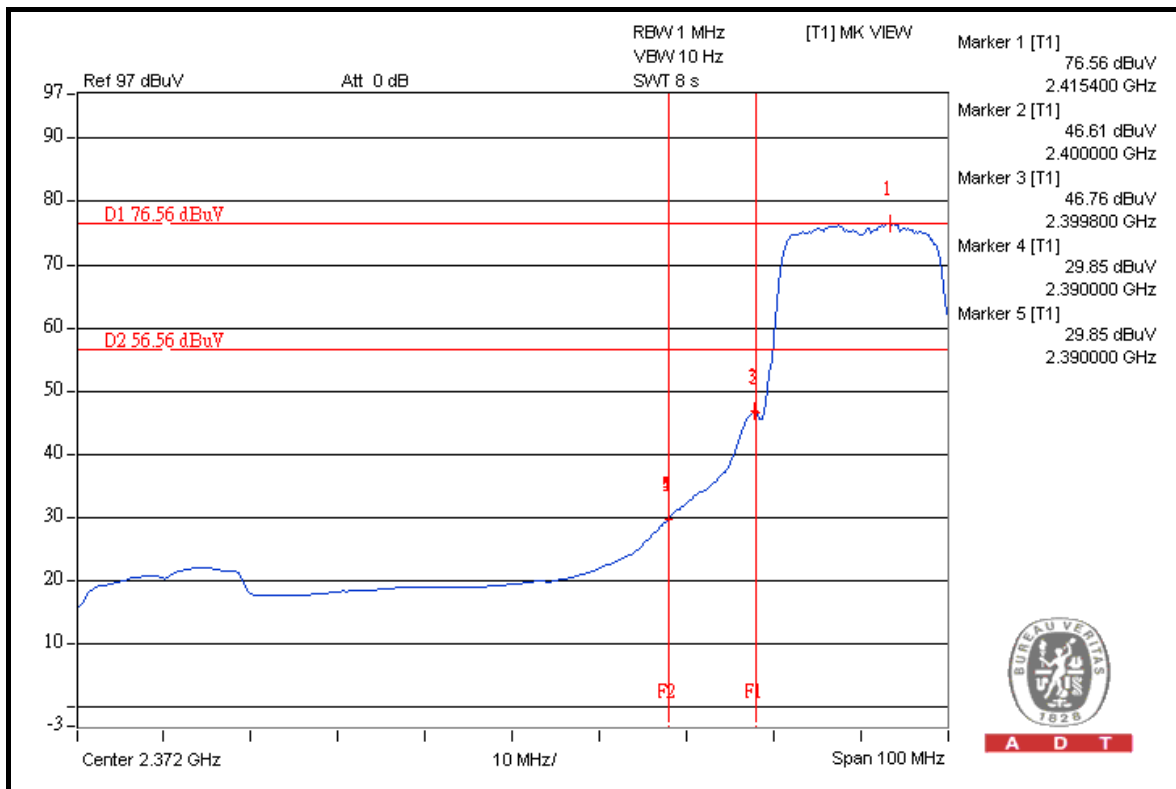
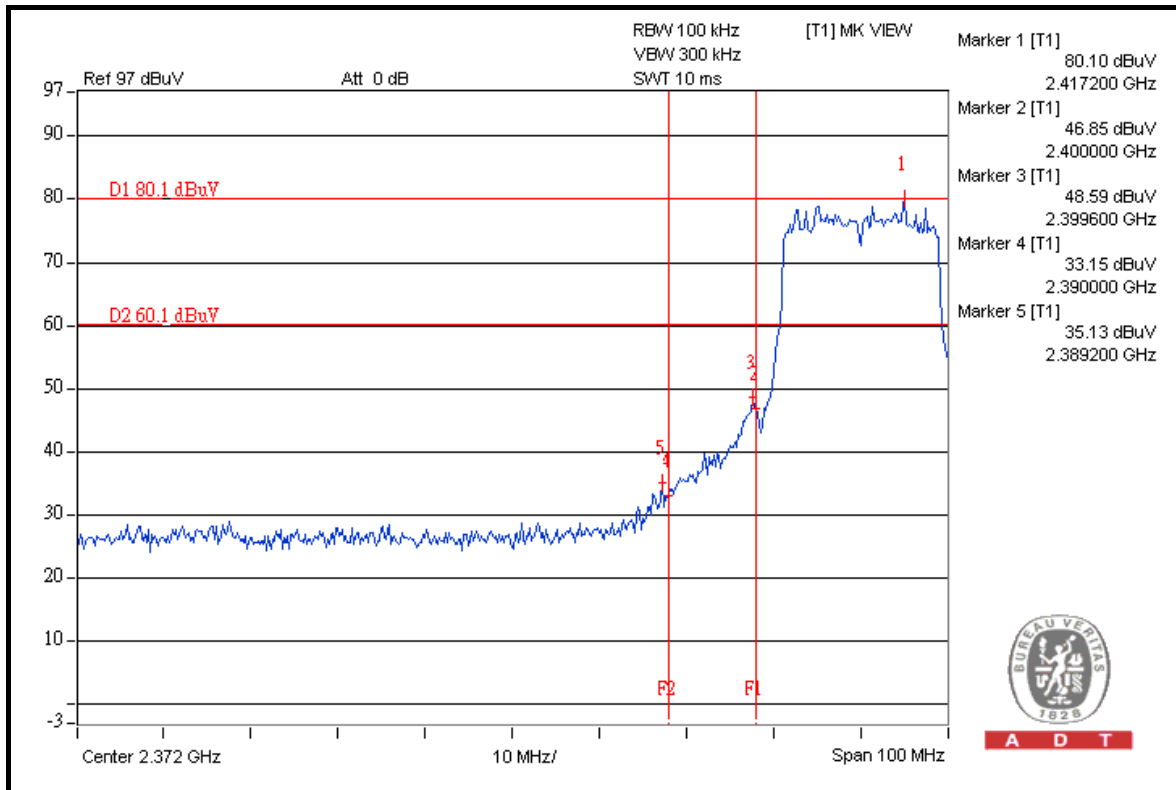
| FREQUENCY (MHz) | FUNDAMENTAL EMISSION (dBuV/m) | DELTA (dB) | MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m) | LIMIT (dBuV/m) |
|-----------------|-------------------------------|------------|--|----------------|
| 2462.00 (PK)    | 110.5                         | 49.40      | 61.10  | 74.00          |
| 2462.00 (AV)    | 98.0                          | 50.00      | 48.00  | 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.

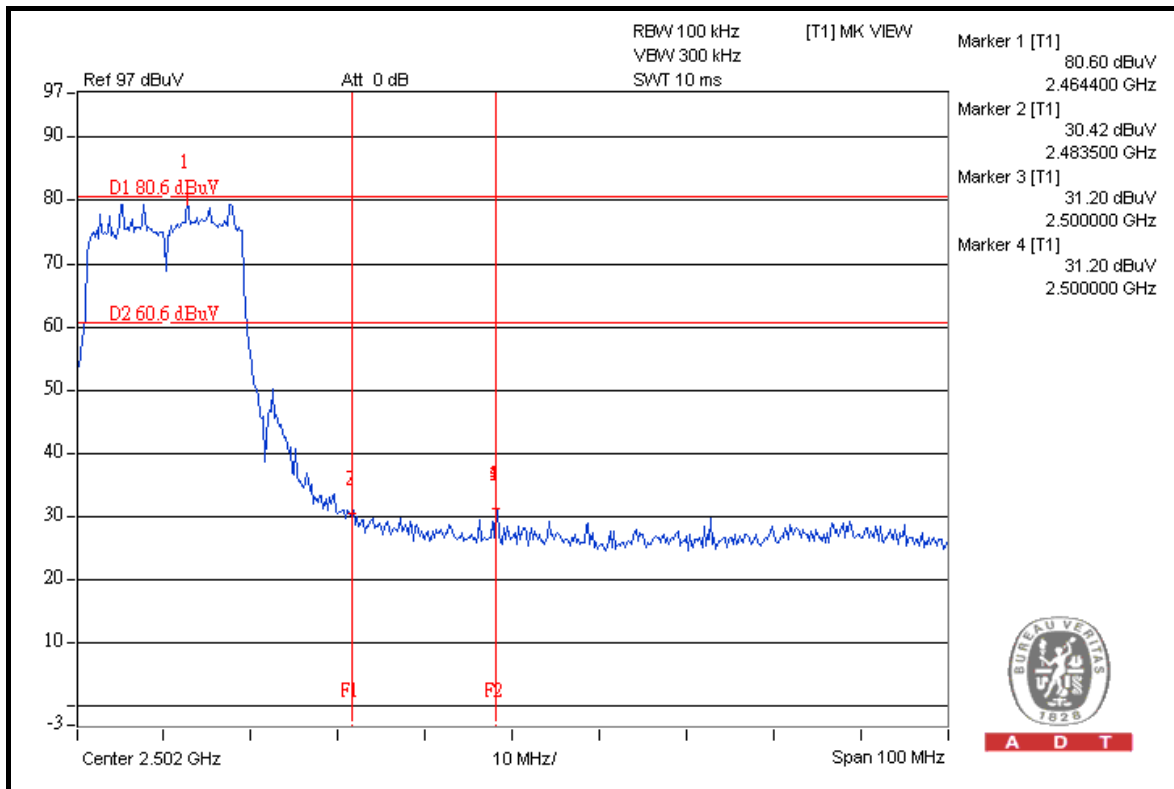
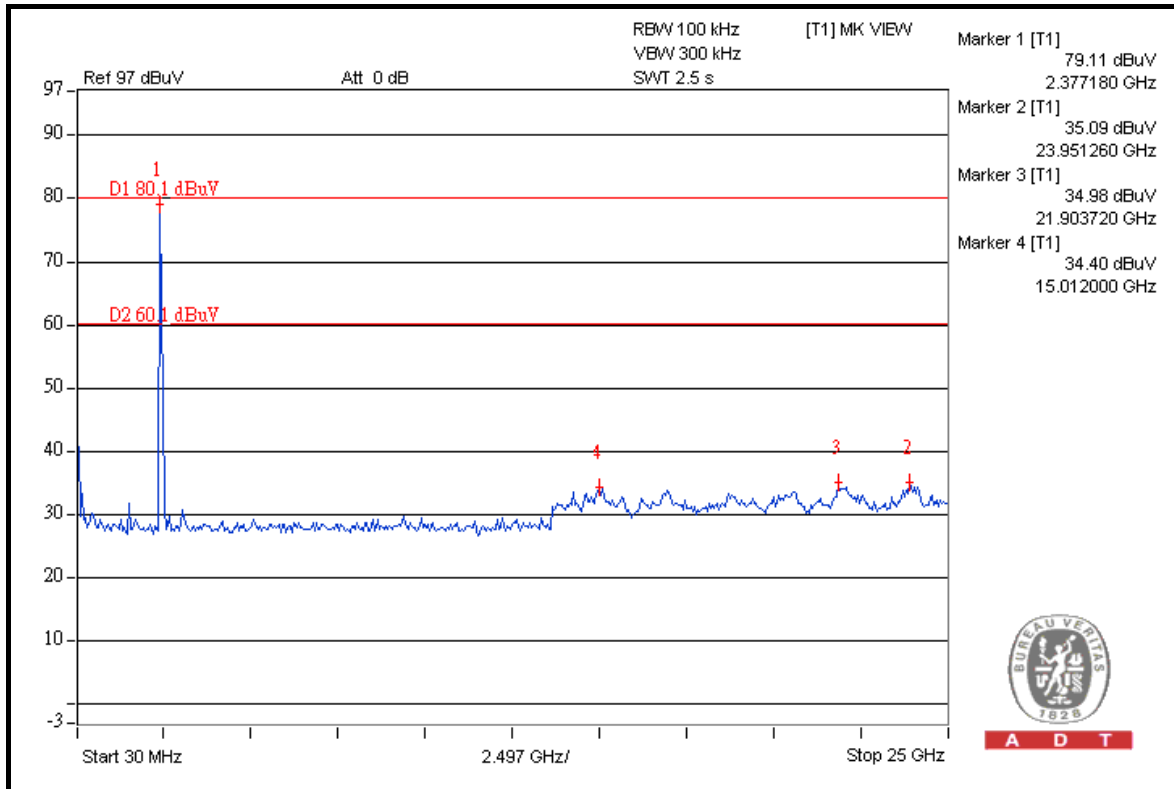


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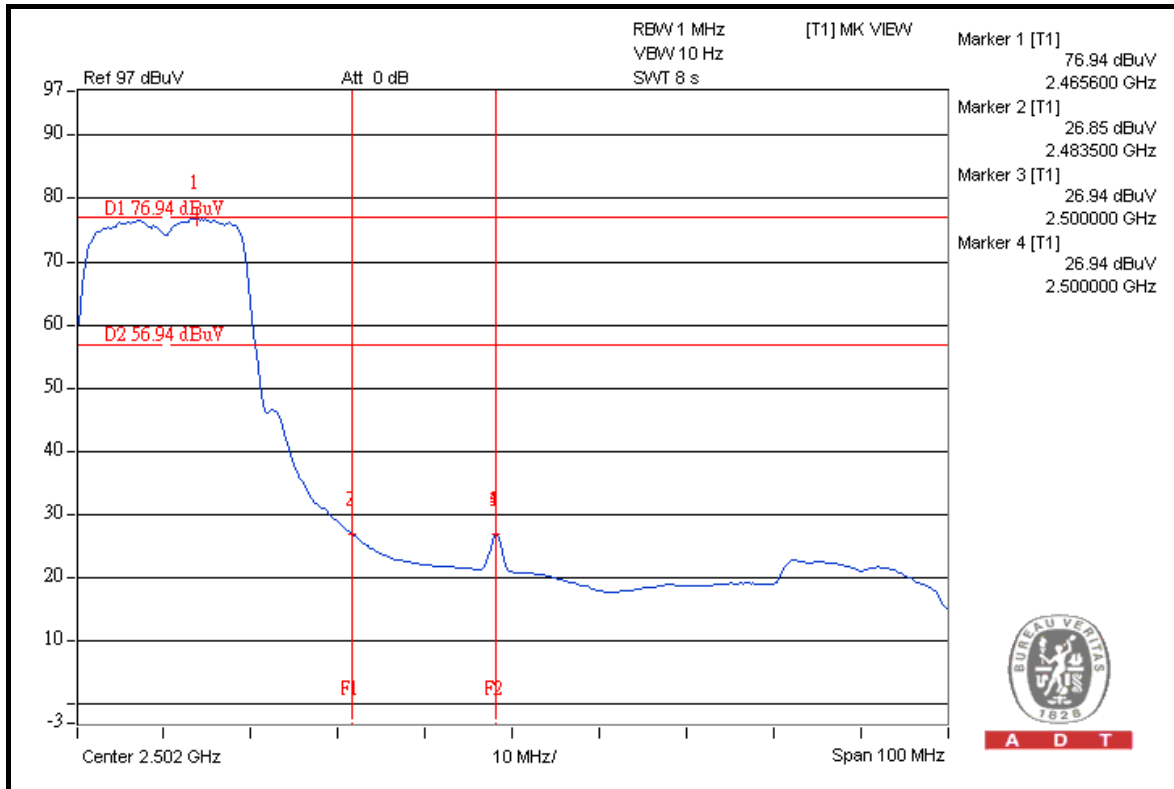
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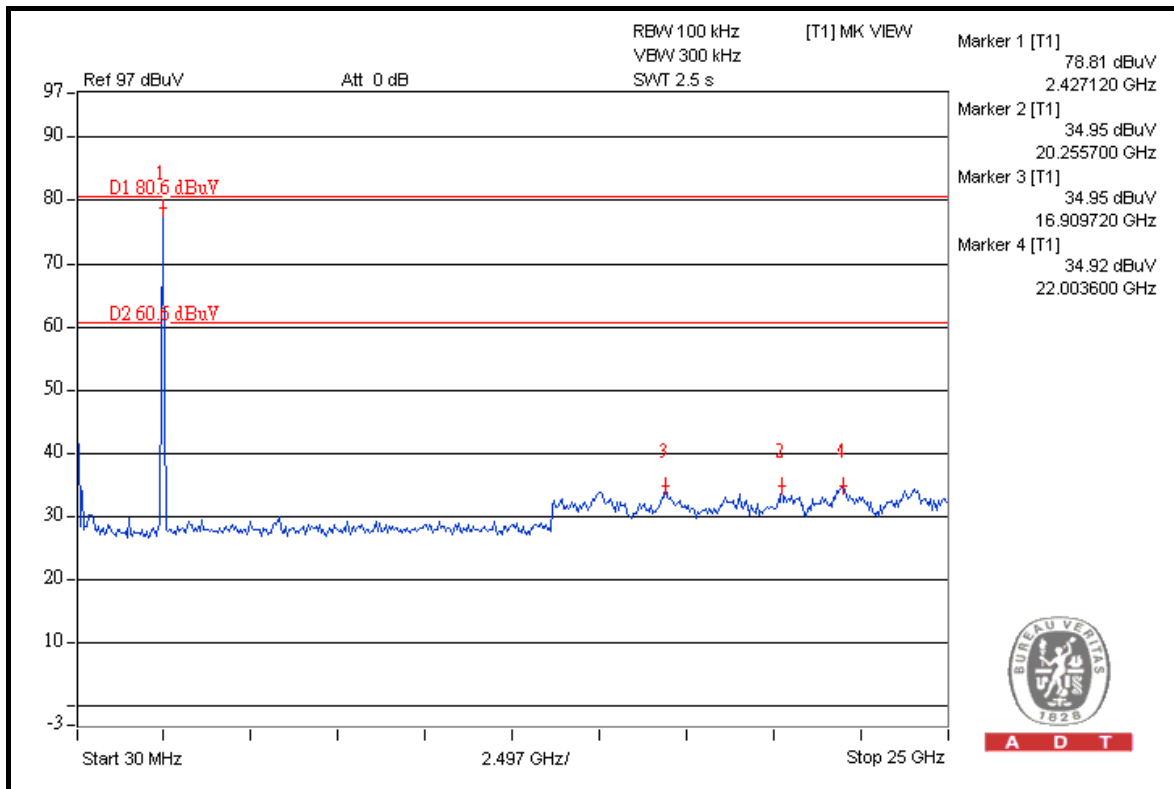




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## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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## 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](http://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

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

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



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## **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.



## 8. APPENDIX B - ENV LIST

```
{admin}=>env list
_SW_FLAG=E1
_ETHERNET=SWITCH
_COMPANY_NAME=Technicolor
_COMPANY_URL=http://www.technicolor.com
_PROD_NAME=Technicolor TG
_PROD_URL=http://www.technicolor.com
_PROD_DESCRIPTION=Technicolor Internet Gateway Device
_PROD_NUMBER=590
_SSID_SERIAL_PREFIX=TNCAP
_BOARD_SERIAL_NBR=1040QT05Q
_PROD_SERIAL_NBR=CP1040QT05Q
_FII=0.0.0.0
_BUILD=Unknown
_BOOTLOADER_VERSION=1.0.4
_BUILDVARIANT=--
_MODEM_ACCESS_CODE=6825751362
_OUI=0876FF
_CUSTOVARIANT=
_BUILDNAME=archive_hofkensg
_PRL=12345670
_FIA=Y4
_BOARD_NAME=GANT-D
_COMPANY_ID=TMBB
_COPYRIGHT=Copyright (c) 1999-2010, Technicolor
_TPVERSION=2.0.0
_PROD_ID=0
_PROD_FRIENDLY_NAME=Technicolor TG590
_VARIANT_ID=0
_VARIANT_FRIENDLY_NAME=TG590
_MACADDR=08-76-FF-03-A9-84
_LMACADDR=0A-76-FF-03-A9-84
_WL_VERSION_0=5.60.120.1
_WL_VERSION=5.60.120.1
_WL_MACADDR=08-76-FF-03-A9-85
_LWL_MACADDR=0A-76-FF-03-A9-85
_WL0_WEPKEY_SERIAL=968E26ECB1
_WL0_SSID_PREFIX=TNCAP
_WL0_BASE52_SERIAL=cHwTa4JJhe7WV
_WL0_SSID_SERIAL=3CJPG
_WL0_WPAKEY_SERIAL=JK1MZMP15HA0EDWL
_WL0_MAC_POSTFIX=03A985
_WL0_PIN_SERIAL=48780179
_WL0_UUID_E_SERIAL=420c82a7bd8c51a3bd10076f59efdf36
_WL0_UUID_R_SERIAL=420c82a7bd8c51a3bd10076f59efdf36
_WL1_WEPKEY_SERIAL=62FD2504ED
_WL1_BASE52_SERIAL=sLNdsnQCY4ZLu
_WL1_SSID_SERIAL=243N2
_WL1_WPAKEY_SERIAL=JK1MZMP15HA0EDWL
_WL1_PIN_SERIAL=62716291
_WL1_UUID_E_SERIAL=b5e8ccbf4dea5520a8d6796229c5c374
```



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```
_WL1_UUID_R_SERIAL=b5e8ccbf4dea5520a8d6796229c5c374
_WL2_WEPKEY_SERIAL=1F6522BB6B
_WL2_BASE52_SERIAL=tJKruRmMpRRdY
_WL2_SSID_SERIAL=3JT24
_WL2_WPAKEY_SERIAL=JK1MZMP15HA0EDWL
_WL2_PIN_SERIAL=89209219
_WL2_UUID_E_SERIAL=b29d2f4b838455e2b98e1edbc606b336
_WL2_UUID_R_SERIAL=b29d2f4b838455e2b98e1edbc606b336
_WL3_WEPKEY_SERIAL=6B16A231A8
_WL3_BASE52_SERIAL=ySPEQquXvuwTn
_WL3_SSID_SERIAL=ZZ4R3
_WL3_WPAKEY_SERIAL=JK1MZMP15HA0EDWL
_WL3_PIN_SERIAL=64384566
_WL3_UUID_E_SERIAL=0c7dd4f539a25cc0ba9aa2f0c1e34349
_WL3_UUID_R_SERIAL=0c7dd4f539a25cc0ba9aa2f0c1e34349
_SSID_POSTFIX_LEGACY_OR_MAC=3C.JPG
_MODEMLABEL=
_WIZ_AUTOPOPUP=1
_SNTPPOLL_POST_SYNC=60
_SNTPPOLL_PRE_SYNC=5
CONF_COND_ENCRYPT=enabled
CONF_REGION=---
CONF_PROVIDER=---
CONF_DESCRIPTION=Factory Defaults
CONF_SERVICE=FiOS_MoCA_WAN
CONF_DATE=
HOST_SETUP=auto
UPGRADE_URL=http://downloads.technicolor.com/GCD/upgrade/upgrade.htm
CONF_DATETIME=0001-01-01T00:00:00Z
CWMPUSER=0876FF-CP1040QT05Q
WL0_SSID_PREFIX_CUSTOM=TNCAP
WL1_SSID_PREFIX_CUSTOM=ThomCom
WL2_SSID_PREFIX_CUSTOM=ThomMob
WL3_SSID_PREFIX_CUSTOM=ThomGst
WL0_SSID=3C.JPG
WL1_SSID=243N2
WL2_SSID=3JT24
WL3_SSID=ZZ4R3
BHR_WAN_IF=auto
BHR_MOCA_PRIVACY=enabled
BHR_MOCA_PASSWORD=000000000000000000
BHR_WSD_CONTINUOUS=enabled
PERSISTENT_DATA=
IS_NOT_DSL_DEVICE=1
FACTORY_DEFAULTS_STATE=Off
CONF_TPVERSION=2.0.0
COLUMNS=80
ROWS=24
SESSIONTIMEOUT=120
```

---END---