

# FCC DoC TEST REPORT

**REPORT NO.:** FD980123L07

**MODEL NO.:** 1383 (Refer to item 3.1 for mode details)

**RECEIVED:** Jan. 23, 2009

**TESTED:** Mar. 10 ~ Mar. 12, 2009

**ISSUED:** Mar. 16, 2009

**APPLICANT:** Microsoft Corporation

**ADDRESS:** One Microsoft Way, Redmond WA  
98052-6399, U.S.A

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

**LAB LOCATION:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen,  
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Taiwan

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# 1 CERTIFICATION

**PRODUCT:** Microsoft® Wireless Mouse (Refer to item 3.1 for mode details)  
**BRAND NAME:** Microsoft®  
**MODEL NO:** 1383 (Refer to item 3.1 for mode details)  
**APPLICANT:** Microsoft Corporation  
**TESTED:** Mar. 10 ~ Mar. 12, 2009  
**TEST ITEM:** ENGINEERING SAMPLE  
**STANDARDS:** **FCC Part 15, Subpart B, Class B**  
**CISPR 22: 1997, Class B**  
**ICES-003: 2004, Class B**  
ANSI C63.4: 2003

The above equipment (Model: 1383 & 1384) 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 :** Ivy Lin , **DATE :** Mar. 16, 2009  
Ivy Lin / Specialist

**TECHNICAL ACCEPTANCE :** Ban Hsieh , **DATE :** Mar. 16, 2009  
Responsible for EMI Ban Hsieh / Supervisor

**APPROVED BY :** David Liu , **DATE:** Mar. 16, 2009  
David Liu / Senior Engineer

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| Standard  | Test Type      | Result | Remarks   |
|---|----------------|--------|---|
| FCC Part 15, Subpart B, Class B<br>CISPR 22: 1997, Class B<br>ICES-003: 2004, Class B | Conducted Test | PASS   | Meets the requirements of limit.<br>Minimum passing margin is -17.49 dB at 0.210MHz |
|   | Radiated Test  | PASS   | Meet the requirement of limit.<br>Minimum passing margin is -2.24dB at 930.02MHz.   |

**Note:** The limit for radiated test was performed according to CISPR 22: 1997, which was specified in FCC PART 15 Subpart B 15.109(g). Also the limits of ICES-003: 2004 and CISPR 22: 1997 are same.

### 2.1 MEASUREMENT UNCERTAINTY

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

| Measurement         | Frequency       | Uncertainty |
|---------------------|-----------------|-------------|
| Conducted emissions | 9kHz ~ 30MHz    | 2.44 dB     |
| Radiated emissions  | 30MHz ~ 200MHz  | 3.69 dB     |
|                     | 200MHz ~1000MHz | 3.84 dB     |

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



### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

|                            |   |
|----------------------------|---|
| <b>PRODUCT</b>             | Microsoft Wireless Mouse (Refer to Note for mode details) |
| <b>MODEL NO.</b>           | 1383 (Refer to Note for mode details)                     |
| <b>POWER SUPPLY</b>        | Refer to Note for more details                            |
| <b>DATA CABLE SUPPLIED</b> | NA  |
| <b>ACCESSORY DEVICES</b>   | NA  |

**NOTE:**

1. The EUT's highest working frequency is 2480MHz.
2. The EUT include Mouse and Dongle, and mouse has two kinds of outer appearance, which the details are as below :

| Product Name              | Model | Power Supply                 | Outer Appearance  |
|---------------------------|-------|------------------------------|---|
| Microsoft® Wireless Mouse | 1383  | 1.5Vdc from alkaline battery |   |
|                           |       |                              |  |
| Microsoft® USB Dongle     | 1384  | 5.0Vdc from host equipment   | -   |

3. The EUT has the following samples and their series no. are as below:

| Sample   | Mouse      |                | Dongle     |          |
|----------|------------|----------------|------------|----------|
|          | Serial No. | Remark         | Serial No. | Remark   |
| Sample 1 | 087        | Stream-EV2-087 | 119        | EV1-D119 |
| Sample 2 | 093        | Stream-EV2-093 | 270        | EV1-D270 |
| Sample 3 | 098        | Stream-EV2-098 | 264        | EV1-D264 |

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

### 3.2 DESCRIPTION OF TEST MODES

1. The EUT is designed for power from host with AC power supply of rating 100-240V, 50/60Hz. For EMI evaluation, 230Vac/50Hz (for EN 55022), 120Vac/60Hz (for FCC Part 15), 110Vac/60Hz (for BSMI CNS 13438) and 100Vac/50Hz (For VCCI) had been covered during the pre-test. The worst radiated emission data was founded at **230Vac/50Hz** and recorded in the applied test report.
2. The following test modes were presented in the report.

| Test mode | Mouse Serial No. | Dongle Serial No. | Conducted Emission | Radiated Emission |
|-----------|------------------|-------------------|--------------------|-------------------|
| A         | 087              | 119               | -                  | √                 |
| B         | 093              | 270               | √                  | √                 |
| C         | 098              | 264               | -                  | √                 |

### 3.3 DESCRIPTION OF SUPPORT UNITS

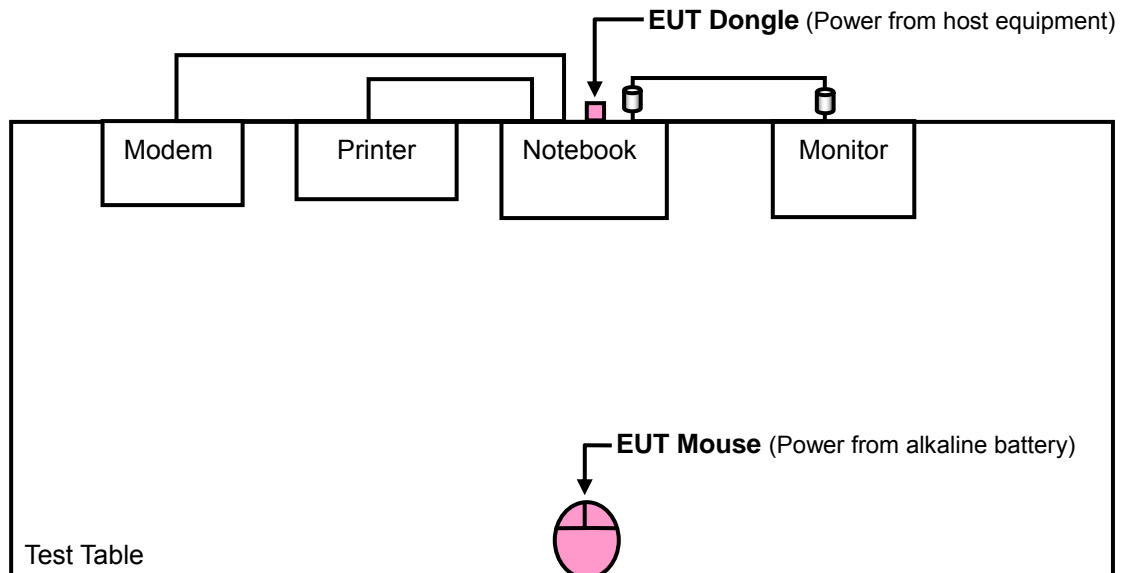
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| NO. | PRODUCT     | BRAND | MODEL NO. | SERIAL NO.                   | FCC ID           |
|-----|-------------|-------|-----------|------------------------------|------------------|
| 1   | NOTEBOOK    | DELL  | PP18L     | D1T5W1S<br>28407620224       | QDS-BRCM1019     |
| 2   | LCD MONITOR | DELL  | 2407WFPb  | CN-0FC255-46633-6<br>65-07US | FCC DoC Approved |
| 3   | MODEM       | ACEEX | 1414V/3   | 0401008252                   | IFAXDM1414       |
| 4   | PRINTER     | EPSON | B241A     | FAPY139300                   | FCC DoC Approved |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS              |
|-----|--|
| 1   | NA   |
| 2   | 1.8m braid shielded wire , VGA & DVI connector , with two cores. |
| 3   | 1.2m braid shielded wire , DB25 & DB9 connector , w/o core.      |
| 4   | 1.8 m shielded cable, terminated with USB connector, w/o core.   |

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

### 3.4 CONFIGURATION OF SYSTEM UNDER TEST



## 4 EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

**TEST STANDARD:**

**FCC Part 15, Subpart B (Section: 15.107)**

**CISPR 22: 1997 (section 5)**

**ICES-003: 2004 (Class A: section 5.2)  
(Class B: section 5.3)**

| FREQUENCY (MHz) | Class A (dBuV) |         | Class B (dBuV) |         |
|-----------------|----------------|---------|----------------|---------|
|                 | Quasi-peak     | Average | Quasi-peak     | Average |
| 0.15 - 0.5      | 79             | 66      | 66 - 56        | 56 - 46 |
| 0.50 - 5.0      | 73             | 60      | 56             | 46      |
| 5.0 - 30.0      | 73             | 60      | 60             | 50      |

- NOTE:**
- (1) The lower limit shall apply at the transition frequencies.
  - (2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
  - (3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER       | MODEL NO.           | SERIAL NO.     | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|----------------------------------|---------------------|----------------|---------------------|-------------------------|
| Test Receiver<br>ROHDE & SCHWARZ | ESCS30              | 100288         | Sep. 22, 2008       | Sep. 21, 2009           |
| RF signal cable<br>Woken         | 5D-FB               | Cable-HYCO2-01 | Dec. 31, 2008       | Dec. 30, 2009           |
| LISN<br>ROHDE & SCHWARZ          | ESH2-Z5             | 100100         | Dec. 29, 2008       | Dec. 28, 2009           |
| LISN<br>ROHDE & SCHWARZ          | ESH3-Z5             | 100311         | Jul. 30, 2008       | Jul. 29, 2009           |
| 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 2.
  3. The VCCI Site Registration No. is C-2047.



#### 4.1.3 TEST PROCEDURE

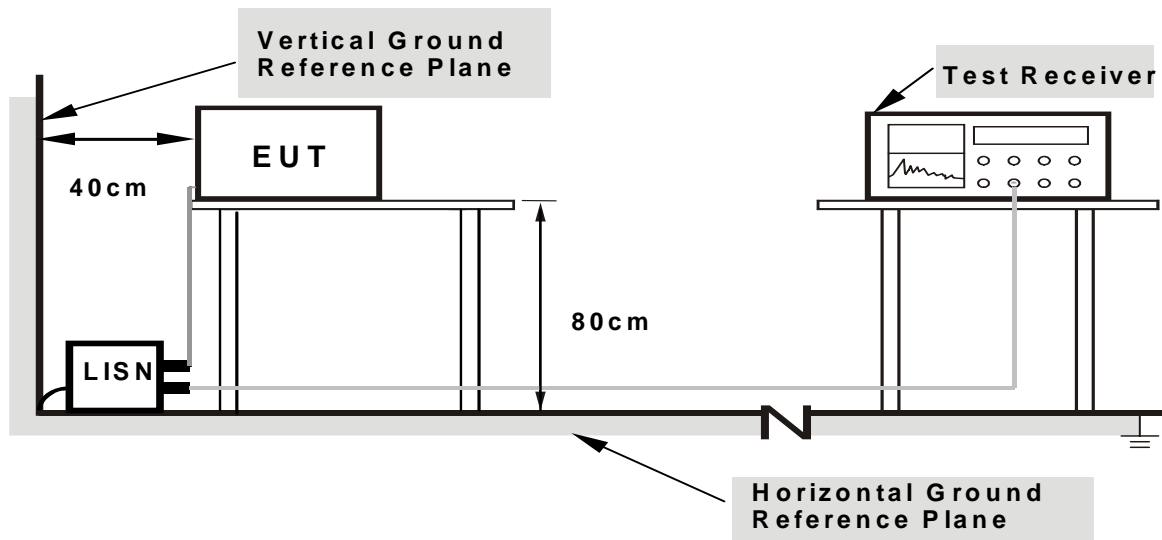
The basic test procedure was in accordance with ANSI C63.4-2003 (section 7), CISPR 22 (section 9) and ICES-003: 2004 (section 4).

- 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 150 kHz to 30 MHz was searched. Emission levels under (Limit - 20dB) was not reported.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.5 TEST SETUP



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

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

#### 4.1.6 EUT OPERATING CONDITIONS

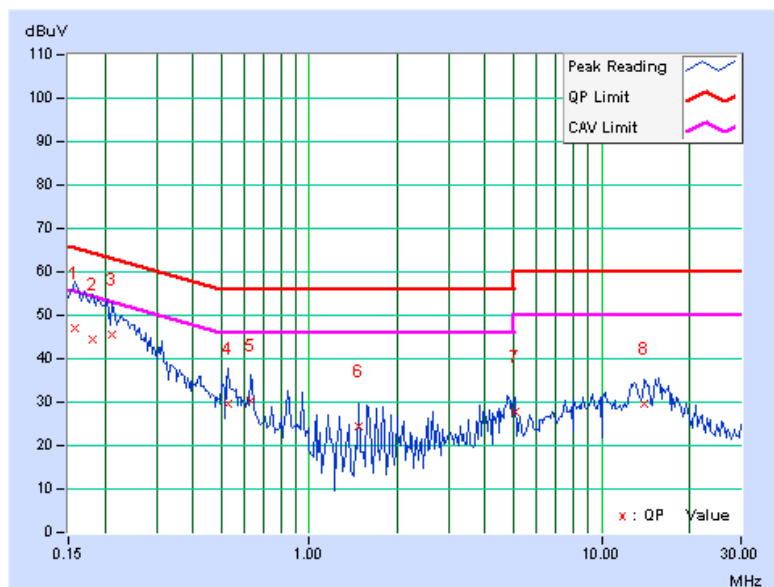
- a. Inserted the EUT (dongle) into the Notebook and placed on the testing table.
- b. The Notebook ran a test program to enable EUT in all functions.
- c. Set the EUT (mouse) and the EUT (dongle) under transmitting and receiving condition at specific channel.
- d. The Notebook sent “H” messages to the printer and the printer printed “H” patterns.
- e. The Notebook sent “H” messages to the monitor and the monitor displayed “H” patterns.
- f. Steps d ~ e were repeated.

#### 4.1.7 TEST RESULTS

|                                 |                             |                      |        |
|---------------------------------|-----------------------------|----------------------|--------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz              | <b>6dB BANDWIDTH</b> | 9 kHz  |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 76% RH, 1020 hPa | <b>PHASE</b>         | Line 1 |
| <b>TESTED BY</b>                | Ariel Lin                   | <b>TEST MODE</b>     | B      |

| 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        | 0.158        | 0.13              | 46.81                   | -   | 46.94                    | -   | 65.58           | 55.58        | -18.64        | -   |
| 2        | 0.181        | 0.13              | 44.41                   | -   | 44.54                    | -   | 64.43           | 54.43        | -19.89        | -   |
| <b>3</b> | <b>0.210</b> | <b>0.13</b>       | <b>45.58</b>            | -   | <b>45.71</b>             | -   | <b>63.20</b>    | <b>53.20</b> | <b>-17.49</b> | -   |
| 4        | 0.529        | 0.15              | 29.36                   | -   | 29.51                    | -   | 56.00           | 46.00        | -26.49        | -   |
| 5        | 0.634        | 0.15              | 30.26                   | -   | 30.41                    | -   | 56.00           | 46.00        | -25.59        | -   |
| 6        | 1.484        | 0.18              | 24.39                   | -   | 24.57                    | -   | 56.00           | 46.00        | -31.43        | -   |
| 7        | 5.074        | 0.31              | 27.53                   | -   | 27.84                    | -   | 60.00           | 50.00        | -32.16        | -   |
| 8        | 13.961       | 0.53              | 29.18                   | -   | 29.71                    | -   | 60.00           | 50.00        | -30.29        | -   |

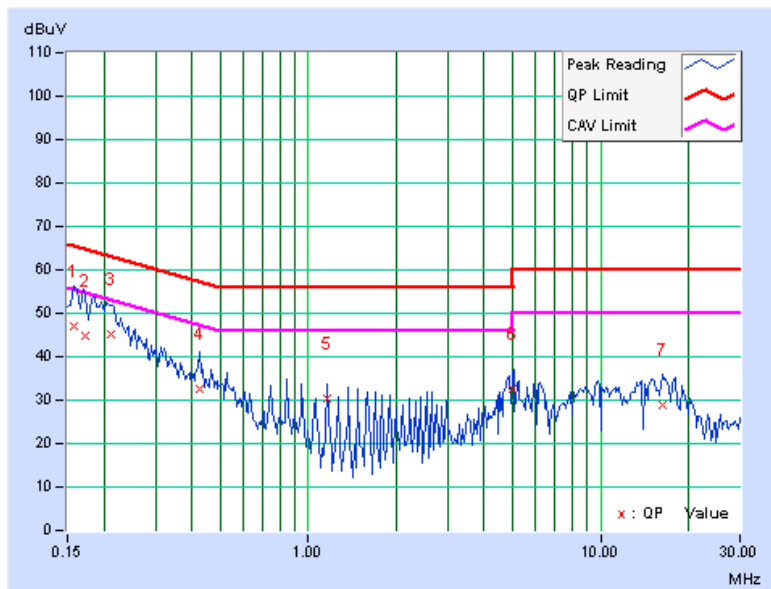
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value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



|                                 |                             |                      |        |
|---------------------------------|-----------------------------|----------------------|--------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz              | <b>6dB BANDWIDTH</b> | 9 kHz  |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 76% RH, 1020 hPa | <b>PHASE</b>         | Line 2 |
| <b>TESTED BY</b>                | Ariel Lin                   | <b>TEST MODE</b>     | B      |

| 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  | 0.158       | 0.13              | 46.75                   | -   | 46.88                    | -   | 65.58           | 55.58 | -18.70      | -   |
| 2  | 0.173       | 0.13              | 44.69                   | -   | 44.82                    | -   | 64.80           | 54.80 | -19.98      | -   |
| 3  | 0.212       | 0.13              | 45.00                   | -   | 45.13                    | -   | 63.11           | 53.11 | -17.98      | -   |
| 4  | 0.423       | 0.15              | 32.30                   | -   | 32.45                    | -   | 57.38           | 47.38 | -24.93      | -   |
| 5  | 1.164       | 0.17              | 30.08                   | -   | 30.25                    | -   | 56.00           | 46.00 | -25.75      | -   |
| 6  | 4.973       | 0.33              | 32.29                   | -   | 32.62                    | -   | 56.00           | 46.00 | -23.38      | -   |
| 7  | 16.289      | 0.70              | 28.26                   | -   | 28.96                    | -   | 60.00           | 50.00 | -31.04      | -   |

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



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

#### TEST STANDARD:

FCC Part 15, Subpart B (section: 15.109)

CISPR 22: 1997 (section 6)

ICES-003: 2004 (Class A: section 5.4)  
(Class B: section 5.5)

| Frequency (MHz) | Class A (at 10m)    | Class B (at 10m)    |
|-----------------|---------------------|---------------------|
|                 | Quasi-peak (dBuV/m) | Quasi-peak (dBuV/m) |
| 30-230          | 40                  | 30                  |
| 230-1000        | 47                  | 37                  |

**NOTE:** The limit for radiated test was performed according to CISPR 22:1997, which was specified in FCC PART 15B 15.109(g). Also the limits of CISPR 22:1997 is same.

| Frequency (MHz) | Class A (at 3m) |                  | Class B (at 3m) |                  |
|-----------------|-----------------|------------------|-----------------|------------------|
|                 | Peak (dBuV/m)   | Average (dBuV/m) | Peak (dBuV/m)   | Average (dBuV/m) |
| Above 1000      | 80              | 60               | 74              | 54               |

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
  2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
  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.

#### FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

| Highest frequency generated or used in the device or on which the device operates or tunes (MHz) | Upper frequency of measurement range (MHz)                          |
|--|---|
| Below 1.705  | 30  |
| 1.705-108  | 1000  |
| 108-500  | 2000  |
| 500-1000   | 5000  |
| Above 1000   | 5th harmonic of the highest frequency or 40 GHz, whichever is lower |

## 4.2.2 TEST INSTRUMENTS

For frequency below 1 GHz

| DESCRIPTION & MANUFACTURER           | MODEL NO.                   | SERIAL NO.     | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|--------------------------------------|-----------------------------|----------------|---------------------|-------------------------|
| Test Receiver<br>ROHDE & SCHWARZ     | ESIB7                       | 100186         | Dec. 05, 2008       | Dec. 04, 2009           |
| Test Receiver<br>ROHDE & SCHWARZ     | ESIB7                       | 100187         | Sep. 22, 2008       | Sep. 21, 2009           |
| Spectrum Analyzer<br>ROHDE & SCHWARZ | FSP40                       | 100025         | Oct. 22, 2008       | Oct. 21, 2009           |
| BILOG Antenna<br>SCHWARZBECK         | VULB9168                    | 9168-148       | Apr. 29, 2008       | Apr. 28, 2009           |
| BILOG Antenna<br>SCHWARZBECK         | VULB9168                    | 9168-149       | Apr. 29, 2008       | Apr. 28, 2009           |
| Preamplifier<br>Agilent              | 8447D                       | 2944A10637     | Dec. 04, 2008       | Dec. 03, 2009           |
| Preamplifier<br>Agilent              | 8447D                       | 2944A10636     | Dec. 04, 2008       | Dec. 03, 2009           |
| RF signal cable<br>Woken             | 8D-FB                       | Cable-Hych1-01 | Jul. 09, 2008       | Jul. 08, 2009           |
| RF signal cable<br>Woken             | 8D-FB                       | Cable-Hych1-02 | Jul. 09, 2008       | Jul. 08, 2009           |
| Software<br>ADT                      | ADT_Radiated_<br>V 7.7.03.6 | NA             | NA                  | NA                      |
| Antenna Tower<br>HD Deisel GmbH      | MA240                       | 11030          | NA                  | NA                      |
| Antenna Tower<br>HD Deisel GmbH      | MA240                       | 12030          | NA                  | NA                      |
| Turn Table<br>HD Deisel GmbH         | DS430                       | 50303          | NA                  | NA                      |
| Controller<br>HD Deisel GmbH         | HD2000                      | 18303          | 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 1.
  3. The FCC Site Registration No. is 477732.
  4. The IC Site Registration No. is IC 7450F-1.
  5. The VCCI Site Registration No. is R-1893.

For frequency above 1 GHz

| DESCRIPTION & MANUFACTURER           | MODEL NO.                    | SERIAL NO.  | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|--------------------------------------|------------------------------|-------------|---------------------|-------------------------|
| Test Receiver<br>ROHDE & SCHWARZ     | ESIB7                        | 100188      | Dec. 22, 2008       | Dec. 21, 2009           |
| Spectrum Analyzer<br>ROHDE & SCHWARZ | FSP40                        | 100025      | Oct. 22, 2008       | Oct. 21, 2009           |
| BILOG Antenna<br>SCHWARZBECK         | VULB9168                     | 9168-157    | Apr. 30, 2008       | Apr. 29, 2009           |
| HORN Antenna<br>SCHWARZBECK          | BBHA 9120 D                  | 9120D-405   | Jan. 12, 2009       | Jan. 11, 2010           |
| HORN Antenna<br>SCHWARZBECK          | BBHA 9170                    | BBHA9170148 | Jul. 03, 2008       | Jul. 02, 2009           |
| Loop Antenna                         | HFH2-Z2                      | 100070      | Jan. 14, 2008       | Jan. 13, 2010           |
| Preamplifier<br>Agilent              | 8449B                        | 3008A01961  | Oct. 03, 2008       | Oct. 02, 2009           |
| Preamplifier<br>Agilent              | 8447D                        | 2944A10629  | Oct. 23, 2008       | Oct. 22, 2009           |
| RF signal cable<br>HUBER+SUHNER      | SUCOFLEX 104                 | 23636/6     | Aug. 21, 2008       | Aug. 20, 2009           |
| RF signal cable<br>HUBER+SUHNER      | SUCOFLEX 104                 | 283402/4    | Aug. 21, 2008       | Aug. 20, 2009           |
| Software<br>ADT.                     | ADT_Radiated_<br>V7.6.15.9.2 | NA          | NA                  | NA                      |
| Antenna Tower<br>ADT.                | AT100                        | AT93021702  | NA                  | NA                      |
| Turn Table<br>ADT.                   | TT100.                       | TT93021702  | NA                  | NA                      |
| Controller<br>ADT.                   | SC100.                       | SC93021702  | 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 2.
  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 686814.
  5. The IC Site Registration No. is IC 7450F-2.

### 4.2.3 TEST PROCEDURE

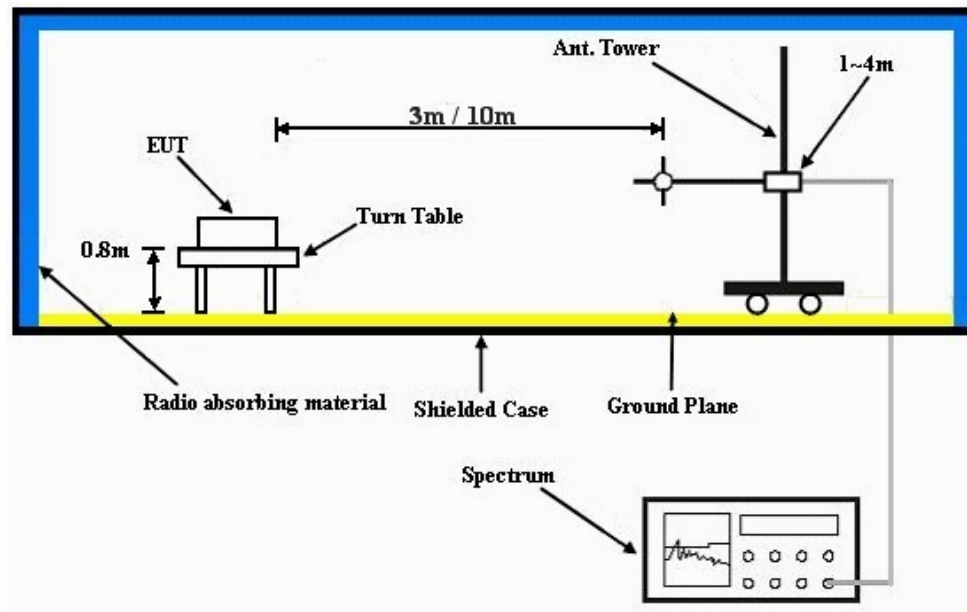
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 / 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 10 / 3 meters away from the interference-receiving antenna, which was 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for peak detection (PK) at frequency above 1 GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for average detection (AV) at frequency above 1 GHz.
3. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the interference-receiving antenna.



#### 4.2.4 TEST SETUP



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

#### 4.2.5 EUT OPERATING CONDITIONS

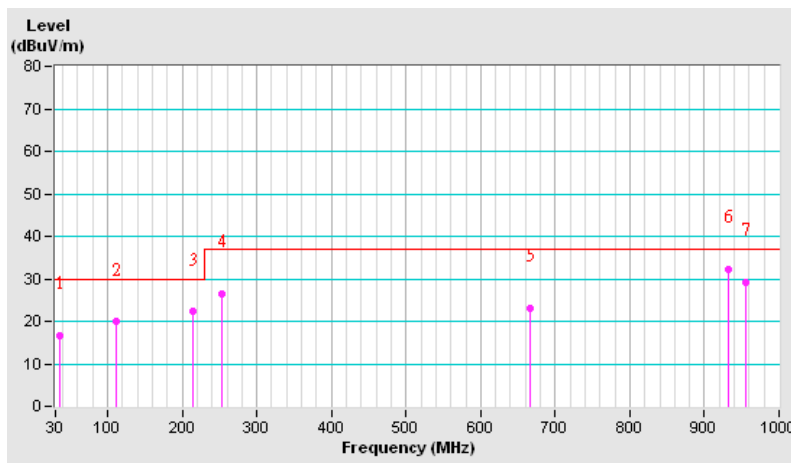
Same as item 4.1.6

#### 4.2.6 TEST RESULTS

|                                 |                             |  |                     |
|---------------------------------|-----------------------------|--|---------------------|
| <b>FREQUENCY RANGE</b>          | 30-1000 MHz                 | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120 kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 65% RH, 1022 hPa | <b>TEST MODE</b>                         | A                   |
| <b>TESTED BY</b>                | Eason Chen                  |  |                     |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 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  | 35.83       | 16.59 QP                | 30.00          | -13.41      | 4.00 H             | 110                  | 3.22             | 13.37                    |
| 2  | 111.64      | 19.84 QP                | 30.00          | -10.16      | 4.00 H             | 140                  | 9.32             | 10.52                    |
| 3  | 214.67      | 22.29 QP                | 30.00          | -7.71       | 4.00 H             | 296                  | 10.82            | 11.47                    |
| 4  | 253.55      | 26.39 QP                | 37.00          | -10.61      | 3.00 H             | 305                  | 12.98            | 13.41                    |
| 5  | 665.65      | 22.99 QP                | 37.00          | -14.01      | 1.00 H             | 354                  | 0.10             | 22.89                    |
| 6  | 931.96      | 32.24 QP                | 37.00          | -4.76       | 1.00 H             | 132                  | 4.43             | 27.81                    |
| 7  | 955.29      | 29.08 QP                | 37.00          | -7.92       | 1.00 H             | 310                  | 0.93             | 28.15                    |

- 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.

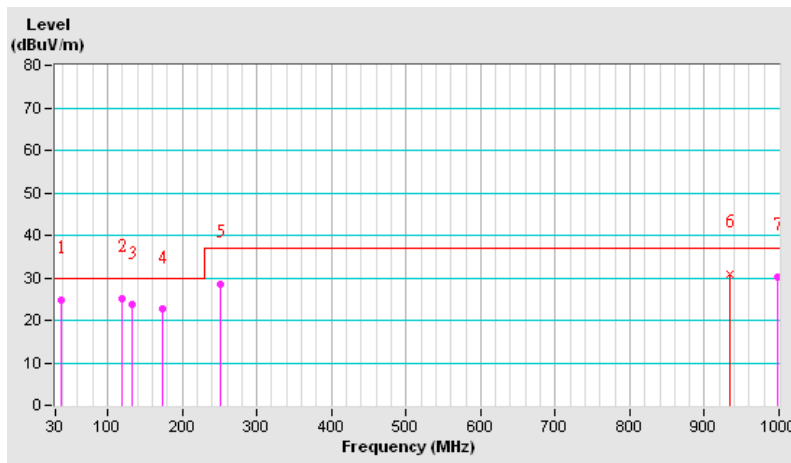




|                                 |                             |  |                     |
|---------------------------------|-----------------------------|--|---------------------|
| <b>FREQUENCY RANGE</b>          | 30-1000 MHz                 | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120 kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 65% RH, 1022 hPa | <b>TEST MODE</b>                         | A                   |
| <b>TESTED BY</b>                | Eason Chen                  |  |                     |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 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  | 37.78       | 24.90 QP                | 30.00          | -5.10       | 1.00 V             | 308                  | 11.79            | 13.11                    |
| 2  | 119.42      | 25.07 QP                | 30.00          | -4.93       | 1.00 V             | 288                  | 13.14            | 11.93                    |
| 3  | 133.03      | 23.56 QP                | 30.00          | -6.44       | 1.00 V             | 203                  | 10.77            | 12.79                    |
| 4  | 173.85      | 22.58 QP                | 30.00          | -7.42       | 1.00 V             | 244                  | 8.87             | 13.71                    |
| 5  | 251.60      | 28.55 QP                | 37.00          | -8.45       | 1.00 V             | 152                  | 14.71            | 13.85                    |
| 6  | 933.88      | 30.98 QP                | 37.00          | -6.02       | 4.00 V             | 114                  | 2.18             | 28.80                    |
| 7  | 998.06      | 30.11 QP                | 37.00          | -6.89       | 2.00 V             | 241                  | 0.21             | 29.90                    |

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



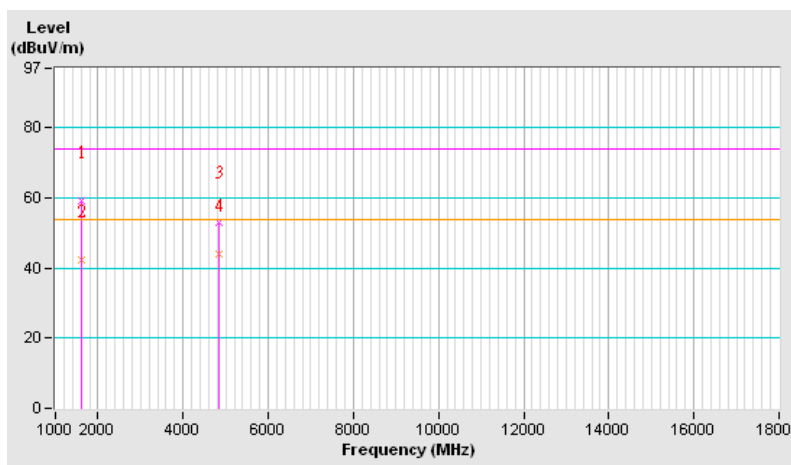


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|                                 |                            |  |                     |
|---------------------------------|----------------------------|--|---------------------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz             | <b>FREQUENCY RANGE</b>                   | 1-18 GHz            |
| <b>ENVIRONMENTAL CONDITIONS</b> | 22deg. C, 66% RH, 1021 hPa | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak/Average, 1 MHz |
| <b>TESTED BY</b>                | Kevin Chen                 | <b>TEST MODE</b>                         | A                   |

| 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   | 1601.210    | 59.01 PK                | 74.00          | -14.99      | 1.00 H             | 311                  | 30.85            | 28.16                    |
| 2   | 1601.210    | 42.28 AV                | 54.00          | -11.72      | 1.00 H             | 311                  | 14.12            | 28.16                    |
| 3   | 4837.670    | 53.20 PK                | 74.00          | -20.80      | 1.00 H             | 101                  | 16.84            | 36.36                    |
| 4   | 4837.670    | 43.93 AV                | 54.00          | -10.07      | 1.00 H             | 101                  | 7.57             | 36.36                    |

- 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.



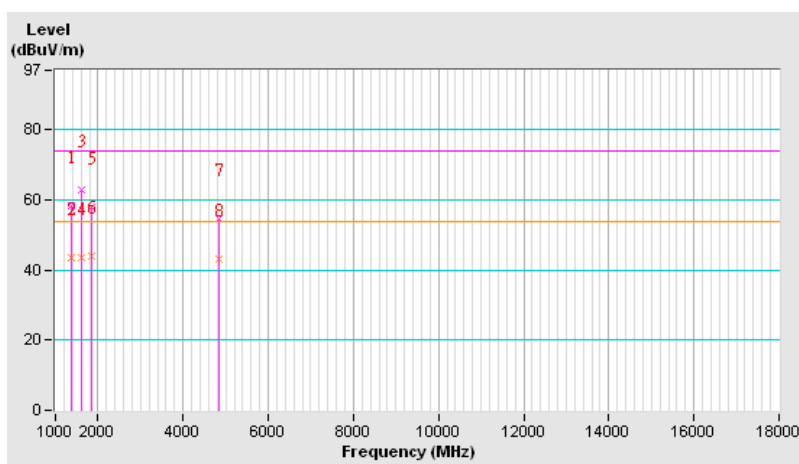


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|                                 |                            |  |                     |
|---------------------------------|----------------------------|--|---------------------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz             | <b>FREQUENCY RANGE</b>                   | 1-18 GHz            |
| <b>ENVIRONMENTAL CONDITIONS</b> | 22deg. C, 66% RH, 1021 hPa | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak/Average, 1 MHz |
| <b>TESTED BY</b>                | Kevin Chen                 | <b>TEST MODE</b>                         | A                   |

| 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   | 1360.070    | 58.30 PK                | 74.00          | -15.70      | 1.00 V             | 201                  | 30.80            | 27.50                    |
| 2   | 1360.070    | 43.69 AV                | 54.00          | -10.31      | 1.00 V             | 201                  | 16.19            | 27.50                    |
| 3   | 1601.200    | 62.74 PK                | 74.00          | -11.26      | 1.00 V             | 125                  | 34.58            | 28.16                    |
| 4   | 1601.200    | 43.60 AV                | 54.00          | -10.40      | 1.00 V             | 125                  | 15.44            | 28.16                    |
| 5   | 1851.700    | 57.81 PK                | 74.00          | -16.19      | 1.00 V             | 102                  | 29.10            | 28.71                    |
| 6   | 1851.700    | 43.84 AV                | 54.00          | -10.16      | 1.00 V             | 102                  | 15.13            | 28.71                    |
| 7   | 4837.760    | 54.50 PK                | 74.00          | -19.50      | 1.00 V             | 285                  | 18.14            | 36.36                    |
| 8   | 4837.760    | 43.20 AV                | 54.00          | -10.80      | 1.00 V             | 285                  | 6.84             | 36.36                    |

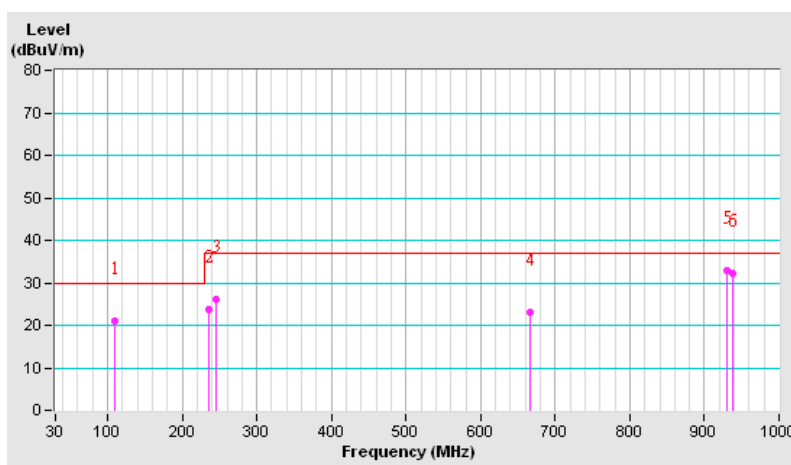
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



|                                 |                             |  |                     |
|---------------------------------|-----------------------------|--|---------------------|
| <b>FREQUENCY RANGE</b>          | 30-1000 MHz                 | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120 kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 65% RH, 1022 hPa | <b>TEST MODE</b>                         | B                   |
| <b>TESTED BY</b>                | Eason Chen                  |  |                     |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 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  | 109.70      | 21.09 QP                | 30.00          | -8.91       | 4.00 H             | 162                  | 10.84            | 10.25                    |
| 2  | 236.05      | 23.86 QP                | 37.00          | -13.14      | 3.00 H             | 289                  | 11.23            | 12.63                    |
| 3  | 245.77      | 26.09 QP                | 37.00          | -10.91      | 3.00 H             | 289                  | 12.93            | 13.16                    |
| 4  | 665.65      | 23.09 QP                | 37.00          | -13.91      | 1.00 H             | 346                  | 0.20             | 22.89                    |
| 5  | 930.02      | 32.93 QP                | 37.00          | -4.07       | 1.00 H             | 128                  | 5.15             | 27.78                    |
| 6  | 937.80      | 32.35 QP                | 37.00          | -4.65       | 1.00 H             | 307                  | 4.46             | 27.89                    |

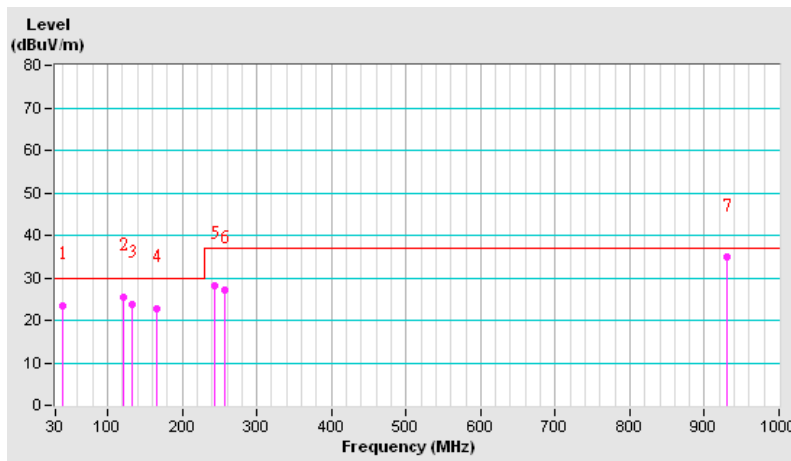
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



|                                 |                             |  |                     |
|---------------------------------|-----------------------------|--|---------------------|
| <b>FREQUENCY RANGE</b>          | 30-1000 MHz                 | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120 kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 65% RH, 1022 hPa | <b>TEST MODE</b>                         | B                   |
| <b>TESTED BY</b>                | Eason Chen                  |  |                     |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 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  | 39.72       | 23.33 QP                | 30.00          | -6.67       | 4.00 V             | 76                   | 10.37            | 12.96                    |
| 2  | 121.36      | 25.59 QP                | 30.00          | -4.41       | 1.00 V             | 319                  | 13.50            | 12.09                    |
| 3  | 133.03      | 23.87 QP                | 30.00          | -6.13       | 1.00 V             | 206                  | 11.07            | 12.79                    |
| 4  | 166.07      | 22.83 QP                | 30.00          | -7.17       | 1.00 V             | 196                  | 8.45             | 14.38                    |
| 5  | 243.83      | 28.29 QP                | 37.00          | -8.71       | 1.00 V             | 167                  | 14.81            | 13.48                    |
| 6  | 257.43      | 27.13 QP                | 37.00          | -9.87       | 1.00 V             | 159                  | 13.24            | 13.90                    |
| 7  | 930.02      | 34.76 QP                | 37.00          | -2.24       | 4.00 V             | 109                  | 6.03             | 28.73                    |

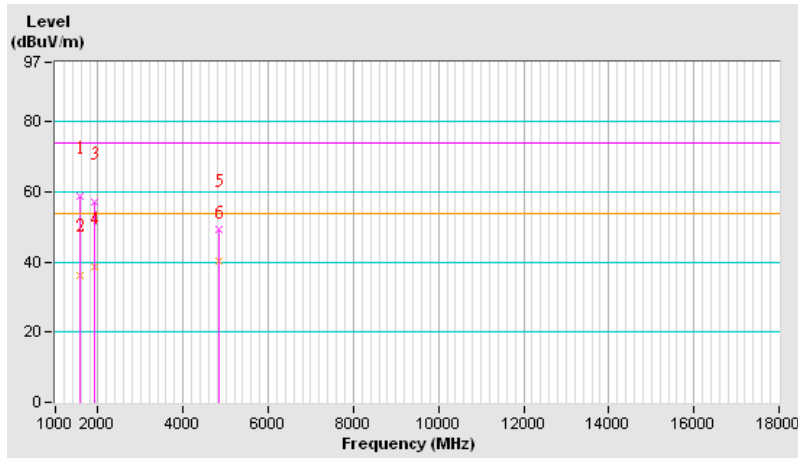
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



|                                 |                            |  |                     |
|---------------------------------|----------------------------|--|---------------------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz             | <b>FREQUENCY RANGE</b>                   | 1-18 GHz            |
| <b>ENVIRONMENTAL CONDITIONS</b> | 22deg. C, 66% RH, 1021 hPa | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak/Average, 1 MHz |
| <b>TESTED BY</b>                | Kevin Chen                 | <b>TEST MODE</b>                         | B                   |

| 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   | 1591.180    | 58.89 PK                | 74.00          | -15.11      | 1.00 H             | 102                  | 30.74            | 28.15                    |
| 2   | 1591.180    | 36.35 AV                | 54.00          | -17.65      | 1.00 H             | 102                  | 8.20             | 28.15                    |
| 3   | 1901.810    | 56.96 PK                | 74.00          | -17.04      | 1.00 H             | 300                  | 28.15            | 28.80                    |
| 4   | 1901.810    | 38.52 AV                | 54.00          | -15.48      | 1.00 H             | 300                  | 9.71             | 28.80                    |
| 5   | 4836.470    | 49.21 PK                | 74.00          | -24.79      | 1.00 H             | 122                  | 12.85            | 36.36                    |
| 6   | 4836.470    | 40.21 AV                | 54.00          | -13.79      | 1.00 H             | 122                  | 3.85             | 36.36                    |

- 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.





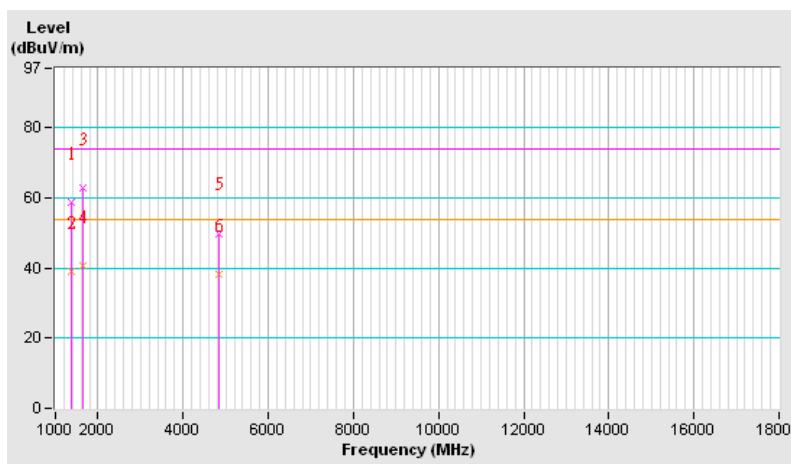


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|                                 |                            |  |                     |
|---------------------------------|----------------------------|--|---------------------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz             | <b>FREQUENCY RANGE</b>                   | 1-18 GHz            |
| <b>ENVIRONMENTAL CONDITIONS</b> | 22deg. C, 66% RH, 1021 hPa | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak/Average, 1 MHz |
| <b>TESTED BY</b>                | Kevin Chen                 | <b>TEST MODE</b>                         | B                   |

| 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   | 1360.720    | 58.69 PK                | 74.00          | -15.31      | 1.00 V             | 20                   | 31.19            | 27.50                    |
| 2   | 1360.720    | 39.13 AV                | 54.00          | -14.87      | 1.00 V             | 20                   | 11.63            | 27.50                    |
| 3   | 1641.280    | 62.87 PK                | 74.00          | -11.13      | 1.00 V             | 183                  | 34.59            | 28.28                    |
| 4   | 1641.280    | 40.53 AV                | 54.00          | -13.47      | 1.00 V             | 183                  | 12.25            | 28.28                    |
| 5   | 4837.150    | 49.90 PK                | 74.00          | -24.10      | 1.00 V             | 253                  | 13.54            | 36.36                    |
| 6   | 4837.150    | 38.23 AV                | 54.00          | -15.77      | 1.00 V             | 253                  | 1.87             | 36.36                    |

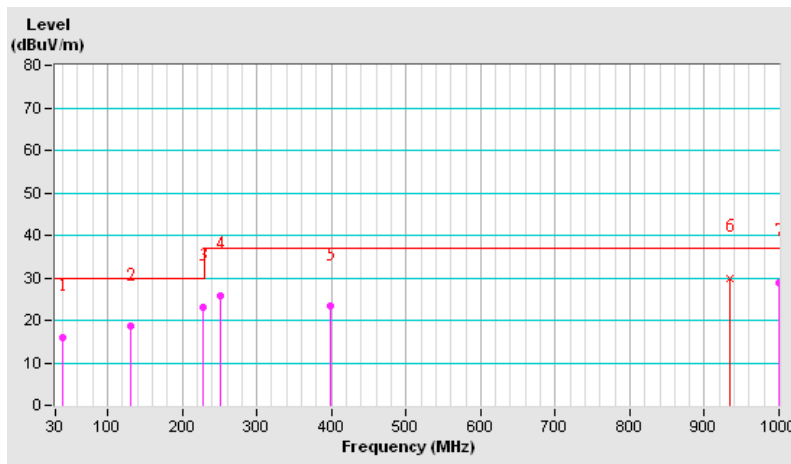
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



|                                 |                             |  |                     |
|---------------------------------|-----------------------------|--|---------------------|
| <b>FREQUENCY RANGE</b>          | 30-1000 MHz                 | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120 kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 65% RH, 1022 hPa | <b>TEST MODE</b>                         | C                   |
| <b>TESTED BY</b>                | Eason Chen                  |  |                     |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 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  | 39.72       | 15.97 QP                | 30.00          | -14.03      | 4.00 H             | 229                  | 3.09             | 12.87                    |
| 2  | 131.08      | 18.49 QP                | 30.00          | -11.51      | 3.00 H             | 139                  | 6.15             | 12.34                    |
| 3  | 228.28      | 23.18 QP                | 30.00          | -6.82       | 3.00 H             | 280                  | 10.97            | 12.21                    |
| 4  | 251.60      | 25.88 QP                | 37.00          | -11.12      | 4.00 H             | 299                  | 12.48            | 13.40                    |
| 5  | 399.34      | 23.30 QP                | 37.00          | -13.70      | 2.00 H             | 215                  | 6.59             | 16.71                    |
| 6  | 933.90      | 29.75 QP                | 37.00          | -7.25       | 1.00 H             | 129                  | 1.92             | 27.84                    |
| 7  | 1000.00     | 28.96 QP                | 37.00          | -8.04       | 1.00 H             | 15                   | 0.16             | 28.81                    |

- 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.

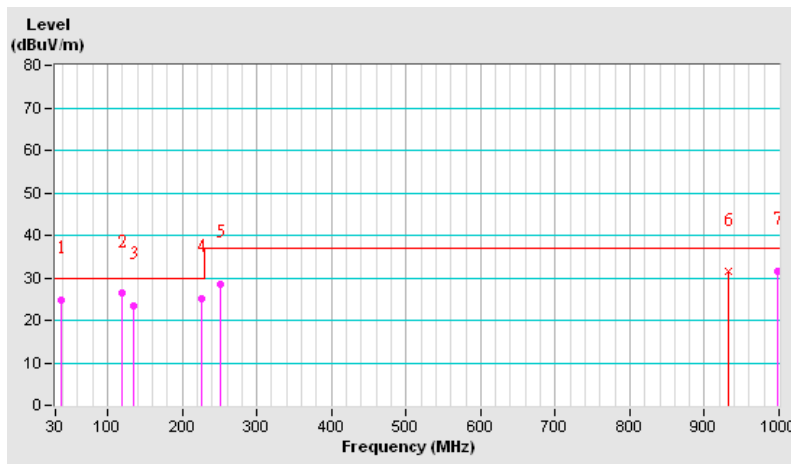




|                                 |                             |  |                     |
|---------------------------------|-----------------------------|--|---------------------|
| <b>FREQUENCY RANGE</b>          | 30-1000 MHz                 | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120 kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 65% RH, 1023 hPa | <b>TEST MODE</b>                         | C                   |
| <b>TESTED BY</b>                | Eason Chen                  |  |                     |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 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  | 37.78       | 24.77 QP                | 30.00          | -5.23       | 1.00 V             | 356                  | 11.66            | 13.11                    |
| 2  | 119.42      | 26.34 QP                | 30.00          | -3.66       | 1.00 V             | 313                  | 14.41            | 11.93                    |
| 3  | 134.97      | 23.35 QP                | 30.00          | -6.65       | 1.00 V             | 234                  | 10.44            | 12.91                    |
| 4  | 226.33      | 25.10 QP                | 30.00          | -4.90       | 2.00 V             | 3                    | 12.62            | 12.48                    |
| 5  | 251.60      | 28.47 QP                | 37.00          | -8.53       | 1.00 V             | 168                  | 14.62            | 13.85                    |
| 6  | 931.45      | 31.37 QP                | 37.00          | -5.63       | 4.00 V             | 126                  | 2.61             | 28.76                    |
| 7  | 998.06      | 31.59 QP                | 37.00          | -5.41       | 2.00 V             | 116                  | 1.69             | 29.90                    |

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



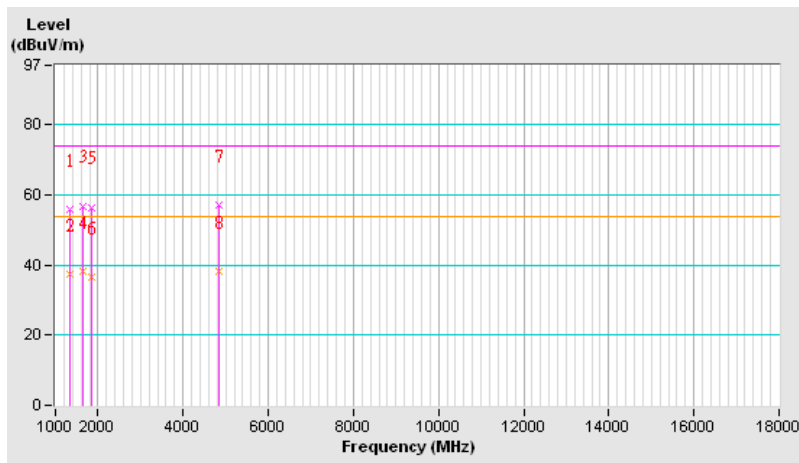


A D T

|                                 |                            |  |                     |
|---------------------------------|----------------------------|--|---------------------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz             | <b>FREQUENCY RANGE</b>                   | 1-18 GHz            |
| <b>ENVIRONMENTAL CONDITIONS</b> | 22deg. C, 66% RH, 1021 hPa | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak/Average, 1 MHz |
| <b>TESTED BY</b>                | Kevin Chen                 | <b>TEST MODE</b>                         | C                   |

| 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   | 1350.700    | 55.98 PK                | 74.00          | -18.02      | 1.00 H             | 102                  | 28.51            | 27.47                    |
| 2   | 1350.700    | 37.21 AV                | 54.00          | -16.79      | 1.00 H             | 102                  | 9.74             | 27.47                    |
| 3   | 1641.180    | 56.90 PK                | 74.00          | -17.10      | 1.00 H             | 150                  | 28.62            | 28.28                    |
| 4   | 1641.180    | 38.30 AV                | 54.00          | -15.70      | 1.00 H             | 150                  | 10.02            | 28.28                    |
| 5   | 1851.700    | 56.50 PK                | 74.00          | -17.50      | 1.00 H             | 180                  | 27.79            | 28.71                    |
| 6   | 1851.700    | 36.43 AV                | 54.00          | -17.57      | 1.00 H             | 180                  | 7.72             | 28.71                    |
| 7   | 4837.100    | 57.21 PK                | 74.00          | -16.79      | 1.00 H             | 95                   | 20.85            | 36.36                    |
| 8   | 4837.100    | 38.11 AV                | 54.00          | -15.89      | 1.00 H             | 95                   | 1.75             | 36.36                    |

- 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.



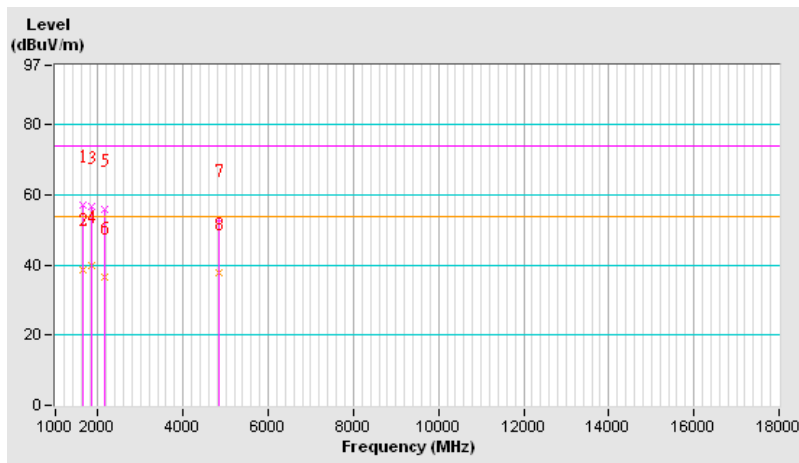


A D T

|                                 |                            |  |                     |
|---------------------------------|----------------------------|--|---------------------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz             | <b>FREQUENCY RANGE</b>                   | 1-18 GHz            |
| <b>ENVIRONMENTAL CONDITIONS</b> | 22deg. C, 66% RH, 1021 hPa | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak/Average, 1 MHz |
| <b>TESTED BY</b>                | Kevin Chen                 | <b>TEST MODE</b>                         | C                   |

| 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   | 1641.280    | 57.17 PK                | 74.00          | -16.83      | 1.00 V             | 101                  | 28.89            | 28.28                    |
| 2   | 1641.280    | 38.79 AV                | 54.00          | -15.21      | 1.00 V             | 101                  | 10.51            | 28.28                    |
| 3   | 1861.740    | 56.53 PK                | 74.00          | -17.47      | 1.00 V             | 54                   | 27.80            | 28.73                    |
| 4   | 1861.740    | 39.74 AV                | 54.00          | -14.26      | 1.00 V             | 54                   | 11.01            | 28.73                    |
| 5   | 2152.300    | 55.70 PK                | 74.00          | -18.30      | 1.00 V             | 150                  | 26.15            | 29.55                    |
| 6   | 2152.300    | 36.69 AV                | 54.00          | -17.31      | 1.00 V             | 150                  | 7.14             | 29.55                    |
| 7   | 4837.150    | 53.08 PK                | 74.00          | -20.92      | 1.02 V             | 95                   | 16.72            | 36.36                    |
| 8   | 4837.150    | 37.90 AV                | 54.00          | -16.10      | 1.02 V             | 95                   | 1.54             | 36.36                    |

- 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.





## 6 APPENDIX - 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 by the following approval agencies according to ISO/IEC 17025:

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

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

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

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

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

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



## **7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

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

**--- END ---**