

# FCC DoC TEST REPORT

**REPORT NO.:** FD980810L01

**MODEL NO.:** F-03B

**RECEIVED:** Aug. 10, 2009

**TESTED:** Aug. 11, 2009

**ISSUED:** Sep. 01, 2009

**APPLICANT:** FUJITSU LIMITED

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

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## 1 CERTIFICATION

**PRODUCT:** Mobile phone

**BRAND:** FOMA

**MODEL NO.:** F-03B

**APPLICANT:** FUJITSU LIMITED

**TESTED:** Aug. 11, 2009

**TEST SAMPLE:** ENGINEERING SAMPLE

**STANDARD:** 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: F-03B) 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 :**  , **DATE :** Sep. 01, 2009  
Joanna Wang / Senior Specialist

**TECHNICAL**  
**ACCEPTANCE :**  , **DATE :** Sep. 01, 2009  
Responsible for EMI Ban Hsieh / Supervisor

**APPROVED BY :**  , **DATE :** Sep. 01, 2009  
David Liu / Senior Engineer

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications.

| EMISSION  |                         |        |  |
|---|-------------------------|--------|--|
| 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 emission test | PASS   | Meet the requirement of limit. Minimum passing margin is -20.25dB at 0.572MHz. |
|   | Radiated emission test  | PASS   | Meet the requirement of limit. Minimum passing margin is -7.43dB at 41.66MHz.  |

**Note:** The limit for radiated test for 30-1000 MHz was performed according to CISPR 22: 1997, which was specified in FCC PART 15 Subpart B 15.109(g). Also the limit of CISPR 22: 1997 is 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 emission | 150kHz ~ 30MHz | 2.44dB      |
| Radiated emissions | Below 1GHz     | 3.69dB      |
|                    | Above 1GHz     | 2.26dB      |

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>          | Mobile phone  |
| <b>MODEL NO.</b>        | F-03B   |
| <b>POWER SUPPLY</b>     | 3.7Vdc from rechargeable lithium battery<br>5.4Vdc from power adapter<br>5.0Vdc from host equipment |
| <b>DATA CABLE</b>       | NA  |
| <b>ACCESSORY DEVICE</b> | Battery   |

**NOTE:**

1. The EUT is powered by the following adapter and battery.

| <b>ADAPTER (NOT FOR SALE)</b> |   |
|-------------------------------|---|
| <b>BRAND</b>                  | SMK                                     |
| <b>INPUT POWER</b>            | 100-240Vac, 0.12A, 50-60Hz              |
| <b>OUTPUT POWER</b>           | 5.4Vdc, 700mA                           |
| <b>POWER CABLE</b>            | DC 1.5m non-shielded cable without core |

| <b>BATTERY</b> |                 |
|----------------|-----------------|
| <b>BRAND</b>   | Fujitsu Limited |
| <b>MODEL</b>   | CA54310-0005    |
| <b>RATING</b>  | 3.7Vdc, 770mAh  |

2. The EUT's highest operating frequency is 2.4GHz.
3. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

### 3.2 DESCRIPTION OF TEST MODES

The EUT is designed with AC power supply of 100-240Vac, 50/60Hz. For EMI evaluation, 230Vac/50Hz (for EN 55022) & 120Vac/60Hz (for FCC Part 15) had been covered during the pre-test. The worst radiated emission data was found at **230Vac/50Hz** and recorded in the applied test report.

The EUT was pre-tested under following modes, and test mode 3 was the worst case for final test.

| Test Mode | Test Condition  |
|-----------|---|
| 1         | GSM + Handset + Adapter, 230Vac/50Hz                    |
| 2         | GSM + Handset + Adapter, 120Vac/60Hz                    |
| <b>3</b>  | <b>GSM + Handsfree + Adapter, 230Vac/50Hz</b>           |
| 4         | GSM + Handsfree + Battery                               |
| 5         | GSM + Bluetooth link + Handsfree + Adapter, 230Vac/50Hz |
| 6         | USB link (with notebook)                                |

### 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.

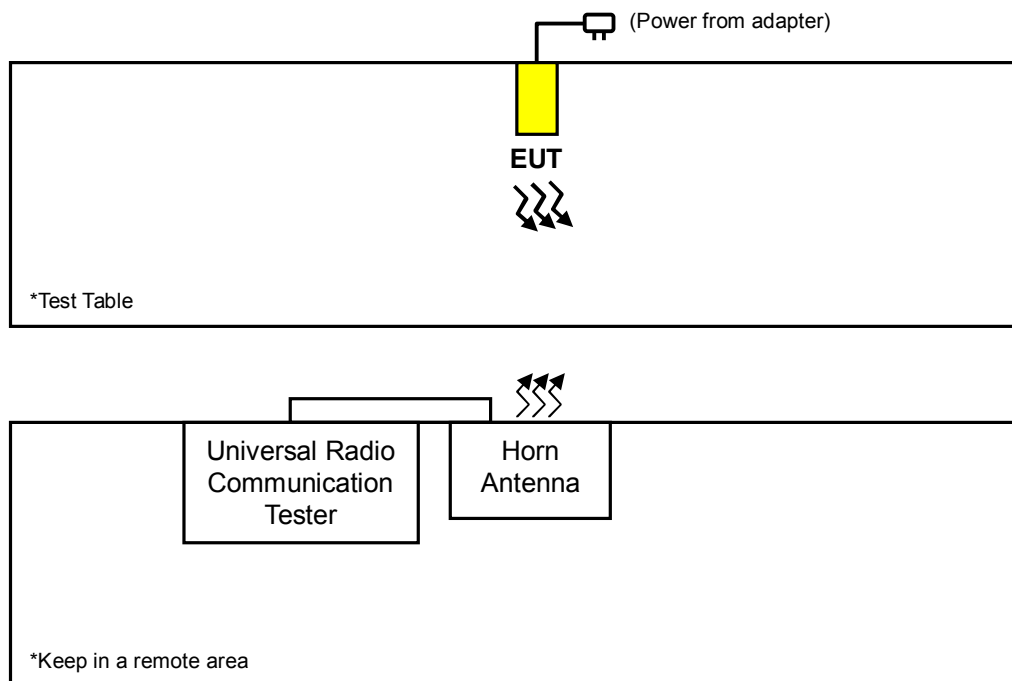
| NO. | PRODUCT                              | BRAND | MODEL NO. | SERIAL NO. | FCC ID |
|-----|--------------------------------------|-------|-----------|------------|--------|
| 1   | ADAPTER                              | SMK   | NA        | NA         | NA     |
| 2   | UNIVERSAL RADIO COMMUNICATION TESTER | R&S   | CMU200    | 101095     | NA     |
| 3   | HORN ANTENNA                         | ETS   | 3117      | 00034126   | NA     |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|-----|---|
| 1   | NA  |
| 2   | NA  |
| 3   | 1.5m RF cable                                       |

**NOTE:**

1. All power cords of the above support units are non-shielded (1.8 m).
2. Item 2~3 acted as a communication partners to transfer data.
3. Item 1 was supplied from the client.

### 3.4 CONFIGURATION OF SYSTEM UNDER TEST



## 4 TEST TYPES AND RESULTS

### 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   |
| 0.5-5           | 73             | 60      | 56             | 46      |
| 5-30            | 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              | 100291         | Nov. 19, 2008       | Nov. 18, 2009           |
| RF signal cable<br>Woken         | 5D-FB               | Cable-HYC01-01 | Dec. 31, 2008       | Dec. 30, 2009           |
| LISN<br>SCHWARZBECK              | NNBL 8226-2         | 8226-142       | Jun. 03, 2009       | Jun. 02, 2010           |
| LISN<br>ROHDE & SCHWARZ          | ESH2-Z5             | 100104         | Dec. 04, 2008       | Dec. 03, 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 1.
  3. The VCCI Site Registration No. is C-2040.



### **4.1.3 TEST PROCEDURES**

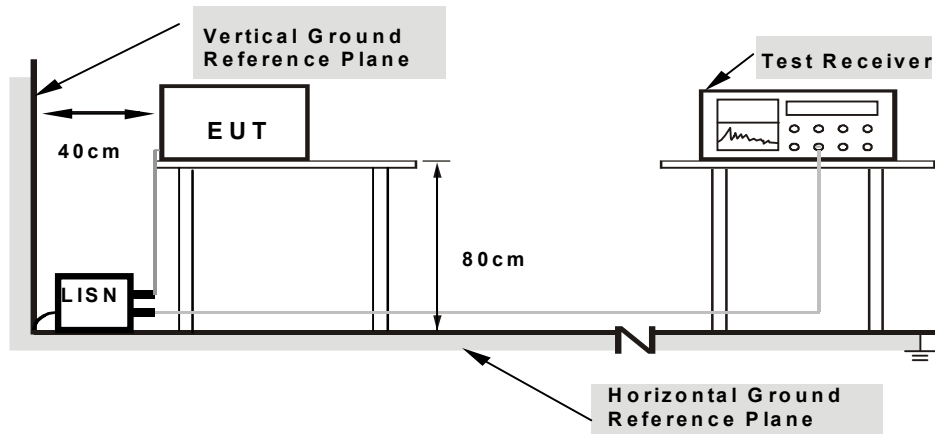
The basic test procedure was in accordance with ANSI C63.4: 2003 (section 7) and CISPR 22 (section 9).

- 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 recorded.

### **4.1.4 DEVIATION FROM TEST STANDARD**

No deviation.

#### 4.1.5 TEST SETUP



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

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

#### 4.1.6 EUT OPERATING CONDITIONS

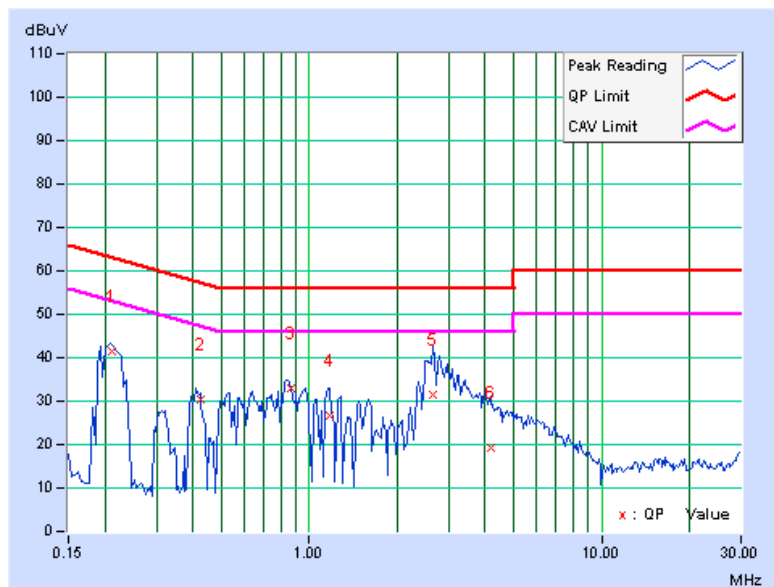
- Placed the EUT on a test table.
- The EUT communicated GSM messages with the universal radio communication tester via horn antenna, which is acted as a communication partner.

#### 4.1.7 TEST RESULTS

|                                 |                             |                      |        |
|---------------------------------|-----------------------------|----------------------|--------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 60 Hz              | <b>6dB BANDWIDTH</b> | 9 kHz  |
| <b>ENVIRONMENTAL CONDITIONS</b> | 22 deg. C, 66% RH, 1002 hPa | <b>PHASE</b>         | Line 1 |
| <b>TESTED BY</b>                | Kevin Chen                  |                      |        |

|    | Freq. | Corr.  | Reading Value |     | Emission Level |     | Limit     |       | Margin |     |
|----|-------|--------|---------------|-----|----------------|-----|-----------|-------|--------|-----|
| No |       | Factor | [dB (uV)]     |     | [dB (uV)]      |     | [dB (uV)] |       | (dB)   |     |
|    | [MHz] | (dB)   | Q.P.          | AV. | Q.P.           | AV. | Q.P.      | AV.   | Q.P.   | AV. |
| 1  | 0.212 | 0.13   | 41.39         | -   | 41.52          | -   | 63.11     | 53.11 | -21.59 | -   |
| 2  | 0.426 | 0.14   | 30.32         | -   | 30.46          | -   | 57.33     | 47.33 | -26.87 | -   |
| 3  | 0.862 | 0.15   | 32.83         | -   | 32.98          | -   | 56.00     | 46.00 | -23.02 | -   |
| 4  | 1.182 | 0.16   | 26.60         | -   | 26.76          | -   | 56.00     | 46.00 | -29.24 | -   |
| 5  | 2.633 | 0.23   | 31.10         | -   | 31.33          | -   | 56.00     | 46.00 | -24.67 | -   |
| 6  | 4.160 | 0.34   | 19.07         | -   | 19.41          | -   | 56.00     | 46.00 | -36.59 | -   |

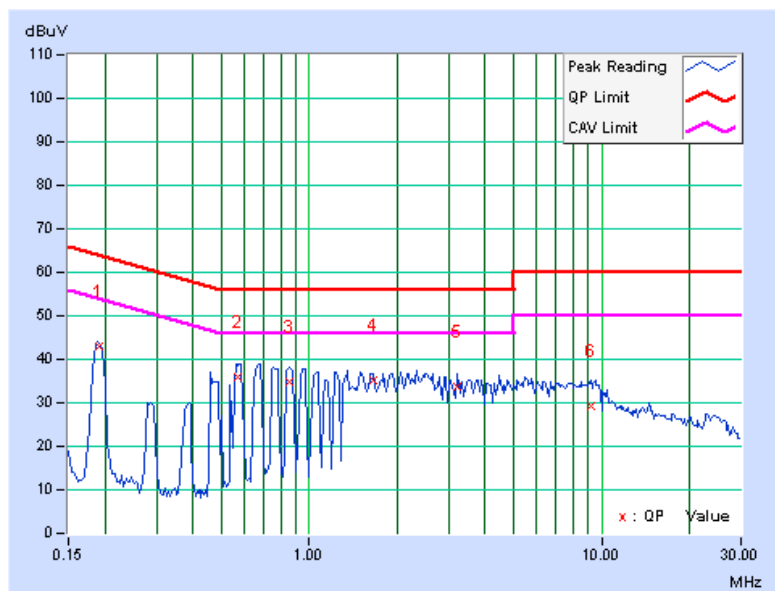
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = 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> | 22 deg. C, 66% RH, 1002 hPa | <b>PHASE</b>         | Line 2 |
| <b>TESTED BY</b>                | Kevin Chen                  |                      |        |

|    | Freq. | Corr.  | Reading Value |     | Emission Level |     | Limit     |       | Margin |     |
|----|-------|--------|---------------|-----|----------------|-----|-----------|-------|--------|-----|
| No |       | Factor | [dB (uV)]     |     | [dB (uV)]      |     | [dB (uV)] |       | (dB)   |     |
|    | [MHz] | (dB)   | Q.P.          | AV. | Q.P.           | AV. | Q.P.      | AV.   | Q.P.   | AV. |
| 1  | 0.190 | 0.09   | 42.73         | -   | 42.82          | -   | 64.02     | 54.02 | -21.20 | -   |
| 2  | 0.572 | 0.10   | 35.65         | -   | 35.75          | -   | 56.00     | 46.00 | -20.25 | -   |
| 3  | 0.857 | 0.11   | 34.58         | -   | 34.69          | -   | 56.00     | 46.00 | -21.31 | -   |
| 4  | 1.657 | 0.13   | 35.02         | -   | 35.15          | -   | 56.00     | 46.00 | -20.85 | -   |
| 5  | 3.215 | 0.21   | 33.32         | -   | 33.53          | -   | 56.00     | 46.00 | -22.47 | -   |
| 6  | 9.199 | 0.53   | 28.79         | -   | 29.32          | -   | 60.00     | 50.00 | -30.68 | -   |

- 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. 28, 2009       | Apr. 27, 2010           |
| BILOG Antenna<br>SCHWARZBECK           | VULB9168                    | 9168-149       | Apr. 28, 2009       | Apr. 27, 2010           |
| 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 | Oct. 28, 2008       | Oct. 27, 2009           |
| RF signal cable<br>Woken               | 8D-FB                       | Cable-Hych1-02 | Oct. 28, 2008       | Oct. 27, 2009           |
| Software<br>ADT                        | ADT_Radiated_<br>V 7.7.03.6 | NA             | NA                  | NA                      |
| Antenna Tower(V)                       | MFA-440                     | 9707           | NA                  | NA                      |
| Antenna Tower(H)                       | MFA-440                     | 970705         | NA                  | NA                      |
| Turn Table                             | DS430                       | 50303          | NA                  | NA                      |
| Controller                             | MF7802                      | 074            | NA                  | NA                      |
| Controller                             | MF7802                      | 08093          | NA                  | NA                      |
| RF signal cable<br>EAST COST Microwave | HP 160S-29                  | NA             | Feb. 17, 2009       | Feb. 16, 2010           |

- 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. 28, 2009       | Apr. 27, 2010           |
| HORN Antenna<br>SCHWARZBECK          | BBHA 9120 D                  | 9120D-405   | Jan. 12, 2009       | Jan. 11, 2010           |
| HORN Antenna<br>SCHWARZBECK          | BBHA 9170                    | BBHA9170148 | Jul. 06, 2009       | Jul. 05, 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                 | 238141/4    | May 13, 2009        | May 12, 2010            |
| RF signal cable<br>HUBER+SUHNER      | SUCOFLEX 104                 | 12738/6     | May 13, 2009        | May 12, 2010            |
| 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.
  6. The VCCI Site Registration No. is G-18.

### 4.2.3 TEST PROCEDURES

The basic test procedure was in accordance with ANSI C63.4: 2003 (section 8) and CISPR 22 (section 10).

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. **<Frequency Range below 1GHz>**
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. **<Frequency Range above 1GHz>**
- c. The height of antenna 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.

**NOTE:**

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

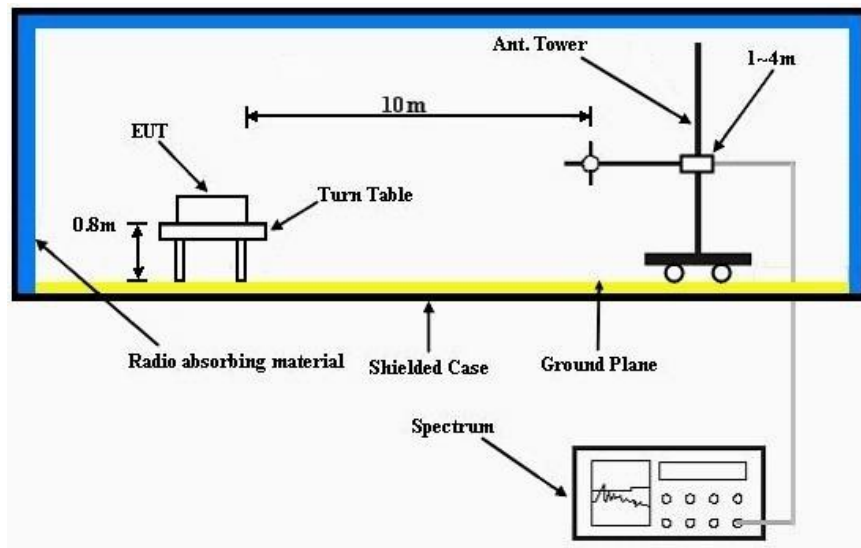
### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

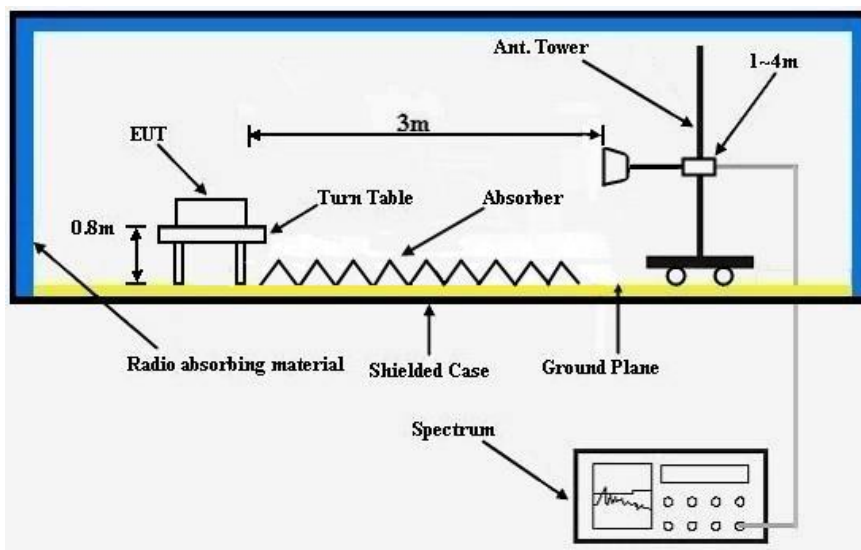


## 4.2.5 TEST SETUP

For frequency below 1 GHz



For frequency above 1 GHz



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

## 4.2.6 EUT OPERATING CONDITIONS

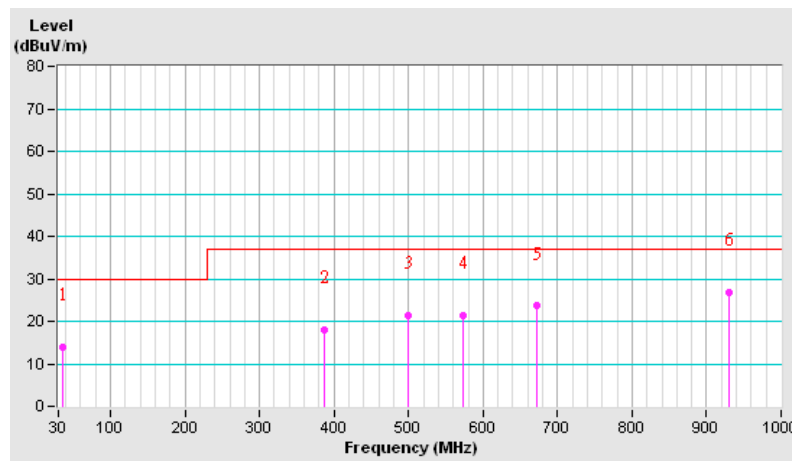
Same as item 4.1.6.

## 4.2.7 TEST RESULTS

|  |                                |                        |             |
|--|--------------------------------|------------------------|-------------|
| <b>ENVIRONMENTAL CONDITIONS</b>          | 25 deg. C, 66% RH,<br>1002 hPa | <b>FREQUENCY RANGE</b> | 30-1000 MHz |
| <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120 kHz            | <b>TESTED BY</b>       | Peter Lin   |

| 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       | 14.02 QP                | 30.00          | -15.98      | 3.50 H             | 18                   | 0.50             | 13.51                    |
| 2  | 387.68      | 17.99 QP                | 37.00          | -19.01      | 3.50 H             | 104                  | 0.84             | 17.15                    |
| 3  | 500.42      | 21.33 QP                | 37.00          | -15.67      | 1.50 H             | 282                  | 1.71             | 19.62                    |
| 4  | 572.34      | 21.48 QP                | 37.00          | -15.52      | 1.50 H             | 281                  | 0.09             | 21.39                    |
| 5  | 671.48      | 23.56 QP                | 37.00          | -13.44      | 3.00 H             | 201                  | 0.57             | 22.99                    |
| 6  | 930.02      | 26.89 QP                | 37.00          | -10.11      | 1.50 H             | 358                  | 0.37             | 26.52                    |

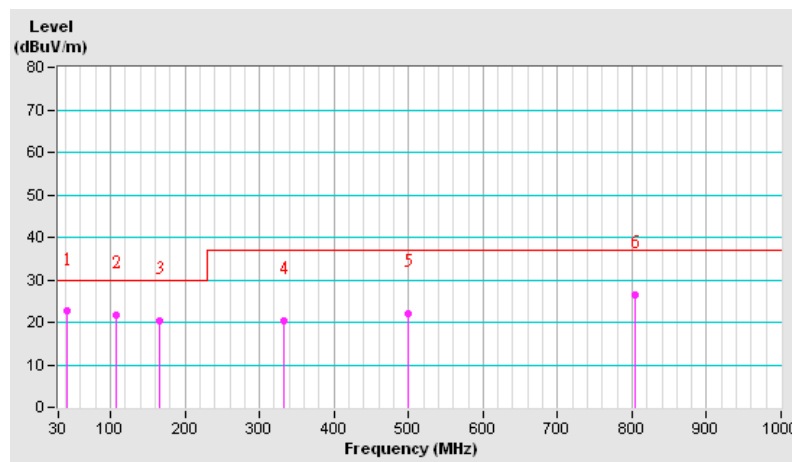
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



|  |                                |                        |             |
|--|--------------------------------|------------------------|-------------|
| <b>ENVIRONMENTAL CONDITIONS</b>          | 25 deg. C, 66% RH,<br>1002 hPa | <b>FREQUENCY RANGE</b> | 30-1000 MHz |
| <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120 kHz            | <b>TESTED BY</b>       | Peter Lin   |

| <b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 10 M</b> |             |                         |                |             |                    |                      |                  |                          |
|---|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.   | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1   | 41.66       | 22.57 QP                | 30.00          | -7.43       | 1.00 V             | 142                  | 7.98             | 14.59                    |
| 2   | 107.76      | 21.62 QP                | 30.00          | -8.38       | 1.50 V             | 346                  | 10.63            | 10.98                    |
| 3   | 166.07      | 20.45 QP                | 30.00          | -9.55       | 1.50 V             | 172                  | 6.56             | 13.89                    |
| 4   | 333.25      | 20.26 QP                | 37.00          | -16.74      | 1.00 V             | 308                  | 4.11             | 16.15                    |
| 5   | 500.42      | 22.03 QP                | 37.00          | -14.97      | 1.00 V             | 83                   | 1.69             | 20.34                    |
| 6   | 803.67      | 26.55 QP                | 37.00          | -10.45      | 2.00 V             | 64                   | 0.35             | 26.20                    |

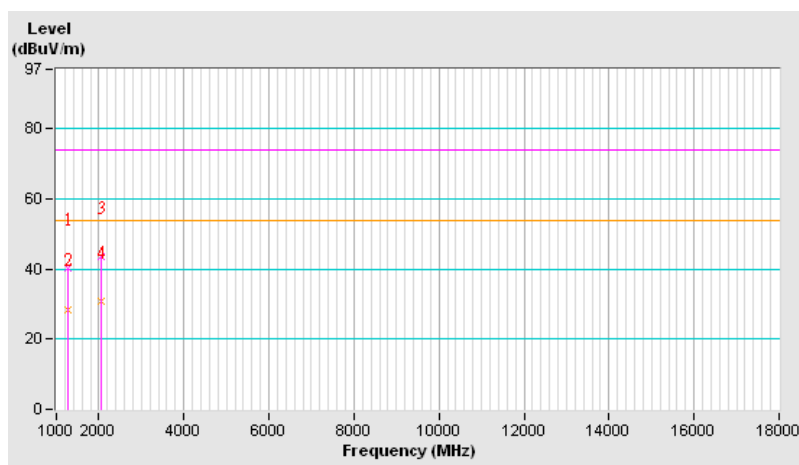
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



|                                 |                             |  |                     |
|---------------------------------|-----------------------------|--|---------------------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 50 Hz              | <b>FREQUENCY RANGE</b>                   | 1-18 GHz            |
| <b>ENVIRONMENTAL CONDITIONS</b> | 24 deg. C, 62% RH, 1002 hPa | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak/Average, 1 MHz |
| <b>TESTED BY</b>                | Peter Lin                   |  |                     |

| 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   | 1276.42     | 40.11 PK                | 74.00          | -33.89      | 1.00 H             | 194                  | 12.89            | 27.22                    |
| 2   | 1276.42     | 28.50 AV                | 54.00          | -25.50      | 1.00 H             | 194                  | 1.28             | 27.22                    |
| 3   | 2070.35     | 43.44 PK                | 74.00          | -30.56      | 1.00 H             | 163                  | 14.18            | 29.26                    |
| 4   | 2070.35     | 30.75 AV                | 54.00          | -23.25      | 1.00 H             | 164                  | 1.49             | 29.26                    |

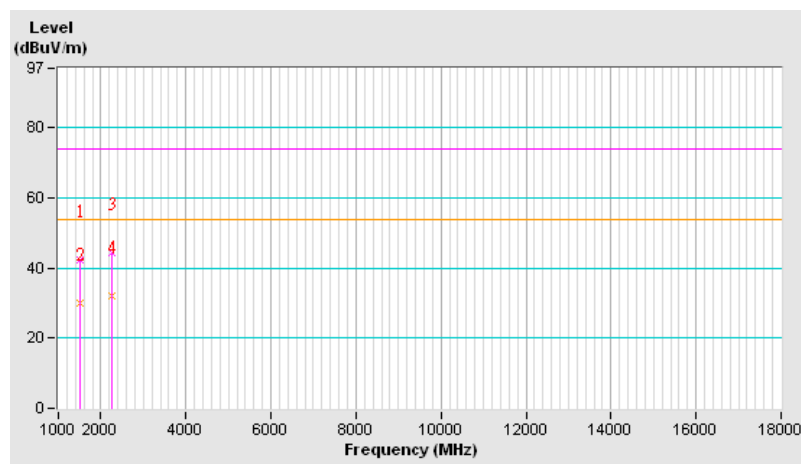
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



|                                 |                             |  |                     |
|---------------------------------|-----------------------------|--|---------------------|
| <b>INPUT POWER (SYSTEM)</b>     | 120 Vac, 50 Hz              | <b>FREQUENCY RANGE</b>                   | 1-18 GHz            |
| <b>ENVIRONMENTAL CONDITIONS</b> | 24 deg. C, 62% RH, 1002 hPa | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Peak/Average, 1 MHz |
| <b>TESTED BY</b>                | Peter Lin                   |  |                     |

| <b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b> |             |                         |                |             |                    |                      |                  |                          |
|--|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No.  | Freq. (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1  | 1505.12     | 42.24 PK                | 74.00          | -31.76      | 2.00 V             | 318                  | 14.23            | 28.01                    |
| 2  | 1505.12     | 29.98 AV                | 54.00          | -24.02      | 2.00 V             | 318                  | 1.97             | 28.01                    |
| 3  | 2258.99     | 44.44 PK                | 74.00          | -29.56      | 1.00 V             | 255                  | 14.49            | 29.95                    |
| 4  | 2258.99     | 32.17 AV                | 54.00          | -21.83      | 1.00 V             | 255                  | 2.22             | 29.95                    |

- 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 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

## 6 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved 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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Fax: 886-2-26051924

### **Hsin Chu EMC/RF Lab**

Tel: 886-3-5935343

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### **Hwa Ya EMC/RF/Safety/Telecom Lab**

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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 – MODIFICATION 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 ---**