

# FCC TEST REPORT

**REPORT NO.:** F910703A04

**MODEL NO.:** M851U, M870U

**RECEIVED:** July 03, 2002

**TESTED:** July 18 ~ 23, 2002

**APPLICANT:** BEHAVIOR TECH COMPUTER CORP.

**ADDRESS:** 2F, 51 TUNG HSING RD., TAIPEI,  
TAIWAN, R.O.C.

**ISSUED BY:** Advance Data Technology Corporation

**LAB LOCATION:** 47 14th Lin, Chiapau Tsun, Linko, Taipei,  
Taiwan, R.O.C.

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2



0528  
ILAC MRA



Lab Code: 200102-0



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## 1 CERTIFICATION

**PRODUCT:** MOUSE  
**BRAND NAME:** BTC  
**MODEL NO:** M851U, M870U  
**TEST ITEM:** ENGINEERING SAMPLE  
**APPLICANT:** BEHAVIOR TECH COMPUTER CORP.  
**STANDARDS:** FCC Part 15, Subpart B, Class B  
CISPR 22: 1997, Class B  
ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that two samples (model: M851U & M870U) of the designation has been tested in our facility from July 18 ~ 23, 2002. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

**CHECKED BY:** Rita Yi, **DATE:** July 26, 2002  
( Rita Yi )

**APPROVED BY:** Fred Chen, **DATE:** July 26, 2002  
( Fred Chen, Manager )

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| Standard                                                                            | Test Type      | Result | Remarks                                                                   |
|-------------------------------------------------------------------------------------|----------------|--------|---------------------------------------------------------------------------|
| FCC Part 15,<br>Subpart B, Class B<br>CISPR 22: 1997,<br>Class B<br>ANSI C63.4-1992 | Conducted Test | PASS   | Meets Class B Limit<br>Minimum passing margin is<br>-17.85 dB at 0.210MHz |
|                                                                                     | Radiated Test  | PASS   | Meets Class B Limit<br>Minimum passing margin is<br>-8.2 dB at 186.38 MHz |

**NOTE:** For conducted emission test, the test limit used is according to FCC Part 15.107. In this part, conducted emission test for telecom port is not mentioned and therefore this item is not tested.

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

|                     |                       |
|---------------------|-----------------------|
| <b>PRODUCT</b>      | MOUSE                 |
| <b>MODEL NO.</b>    | M851U, M870U          |
| <b>POWER SUPPLY</b> | DC 5V, 50mA (From PC) |
| <b>DATA CABLE</b>   | Non-shielded (1.9)    |

**NOTE:** The EUT is a USB Mouse.

The EUT has two model names, which are identical to each other in all aspects except for their model name and outer appearance so there will be a little difference in the layout:

| <b>Model</b> | <b>Brand</b> |
|--------------|--------------|
| M851U        | BTC          |
| M870U        |              |

During the test, both of two models were tested separately and their data were recorded in this report.

For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



### 3.2 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   | PERSONAL COMPUTER | HP    | Brio BA410 | SG12106031 | FCC DoC Approved |
| 2   | MONITOR           | HP    | D2842A     | KR93473124 | BEJCB910         |
| 3   | PRINTER           | EPSON | LQ-300+    | DCGY017059 | FCC DoC Approved |
| 4   | MODEM             | ACEEX | 1414       | 980020533  | IFAXDM1414       |
| 5   | PS/2 KEYBOARD     | BTC   | 5121W      | A00801378  | E5XKB5121WTH0110 |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS                                                  |
|-----|------------------------------------------------------------------------------------------------------|
| 1   | NA                                                                                                   |
| 2   | 1.5 m braid shielded wire, terminated with VGA connector via metallic frame, w/o core                |
| 3   | 1.2m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core |
| 4   | 1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.      |
| 5   | 1.6 m foil shielded wire, terminated with PS/2 connector via metallic frame, w/o core.               |

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

## 4 EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

| 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      |

**NOTES:** (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER                         | MODEL NO. | SERIAL NO.   | CALIBRATED UNTIL |
|----------------------------------------------------|-----------|--------------|------------------|
| ROHDE & SCHWARZ Test Receiver                      | ESHS30    | 828109/007   | July 4, 2003     |
| ROHDE & SCHWARZ Artificial Mains Network (for EUT) | ESH3-Z5   | 839135/006   | July 3, 2003     |
| * ROHDE & SCHWARZ 4-wire ISN                       | ENY41     | 838119/028   | Dec. 2, 2002     |
| * ROHDE & SCHWARZ 2-wire ISN                       | ENY22     | 837497/016   | Dec. 2, 2002     |
| EMCO-L.I.S.N. (for peripheral)                     | 3825/2    | 9204-1964    | July 3, 2003     |
| Software                                           | Cond-V2M1 | NA           | NA               |
| RF cable (JYEBAO)                                  | 5D-FB     | Cable-C02.01 | July 5, 2003     |
| HP Terminator (For EMCO LISN)                      | 11593A    | E1-01-298    | Feb. 20, 2003    |
| HP Terminator (For EMCO LISN)                      | 11593A    | E1-01-299    | Feb. 20, 2003    |

**NOTE:** 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.

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

3. “\*”: These equipment are used for conducted telecom port test only (if tested).

4. The test was performed in ADT Shielded Room No. 2.

5. The VCCI Site Registration No. is C-240.



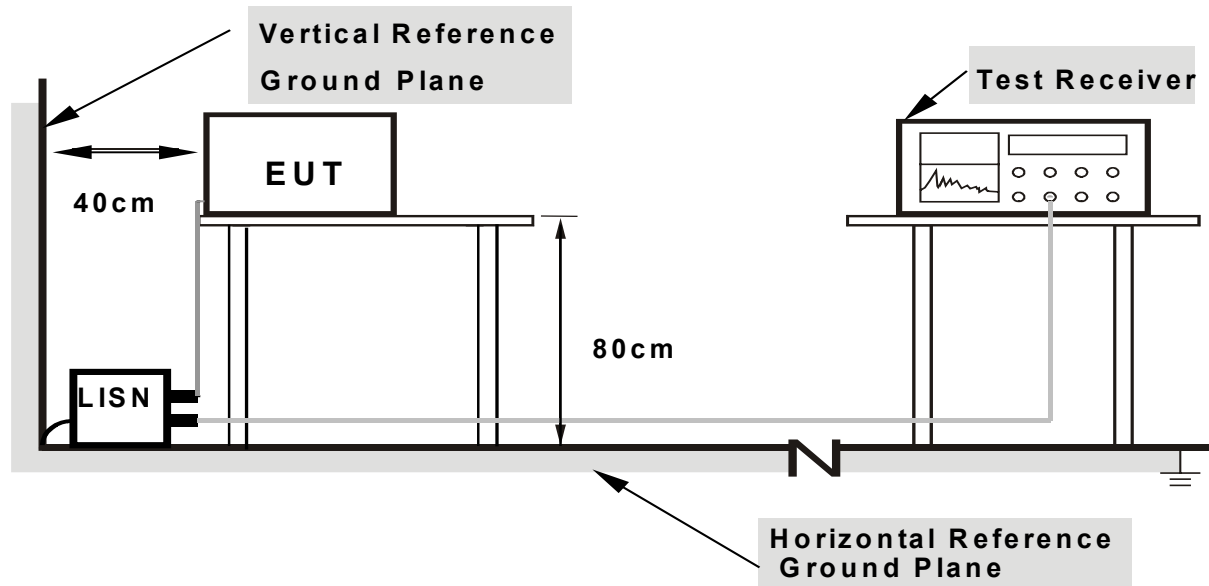
### **4.1.3 TEST PROCEDURE**

- 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 over 10dB under the prescribed limits could not be 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 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 related item – Photographs of the Test Configuration.



#### **4.1.6 EUT OPERATING CONDITIONS**

- a. Turned on the power of all equipment.
- b. PC read a test program to enable all functions.
- c. PC read and wrote messages from FDD and HDD.
- d. PC sent "H" messages to monitor and monitor displayed "H" patterns on screen.
- e. PC sent "H" messages to modem.
- f. PC sent "H" messages to printer, and the printer printed them on paper.
- g. Steps c-g were repeated.

#### 4.1.7 TEST RESULTS (A)

|                          |                              |                     |          |
|--------------------------|------------------------------|---------------------|----------|
| EUT                      | MOUSE                        | MODEL               | M851U    |
|                          |                              | 6dB BANDWIDTH       | 9 kHz    |
| INPUT POWER              | 120Vac, 60 Hz                | PHASE               | Line (L) |
| ENVIRONMENTAL CONDITIONS | 25 deg. C, 70 % RH, 1005 hPa | TESTED BY: Jone Lin |          |

| No | Freq.<br>[MHz] | Corr.<br>Factor<br>(dB) | Reading Value |     | Emission Level |     | Limit     |       | Margin |     |
|----|----------------|-------------------------|---------------|-----|----------------|-----|-----------|-------|--------|-----|
|    |                |                         | [dB (uV)]     |     | [dB (uV)]      |     | [dB (uV)] |       | (dB)   |     |
|    |                |                         | Q.P.          | AV. | Q.P.           | AV. | Q.P.      | AV.   | Q.P.   | AV. |
| 1  | 0.225          | 0.10                    | 38.65         | -   | 38.75          | -   | 62.63     | 52.63 | -23.88 | -   |
| 2  | 0.312          | 0.10                    | 33.87         | -   | 33.97          | -   | 59.92     | 49.92 | -25.95 | -   |
| 3  | 0.624          | 0.10                    | 32.51         | -   | 32.61          | -   | 56.00     | 46.00 | -23.39 | -   |
| 4  | 0.726          | 0.10                    | 33.07         | -   | 33.17          | -   | 56.00     | 46.00 | -22.83 | -   |
| 5  | 5.727          | 0.39                    | 32.55         | -   | 32.94          | -   | 60.00     | 50.00 | -27.06 | -   |
| 6  | 10.337         | 0.62                    | 37.14         | -   | 37.76          | -   | 60.00     | 50.00 | -22.24 | -   |

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

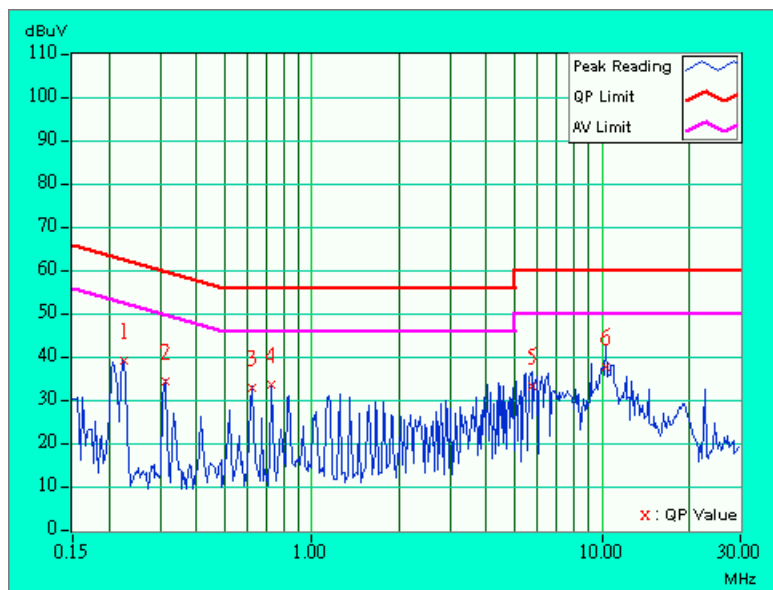
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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>EUT</b>                      | MOUSE                           | <b>MODEL</b>               | M851U       |
|                                 |                                 | <b>6dB BANDWIDTH</b>       | 9 kHz       |
| <b>INPUT POWER</b>              | 120Vac, 60 Hz                   | <b>PHASE</b>               | Neutral (N) |
| <b>ENVIRONMENTAL CONDITIONS</b> | 25 deg. C, 70 % RH,<br>1005 hPa | <b>TESTED BY:</b> Jone Lin |             |

| No | Freq.<br>[MHz] | Corr.<br>Factor<br>(dB) | Reading Value |     | Emission Level |     | Limit     |       | Margin |     |
|----|----------------|-------------------------|---------------|-----|----------------|-----|-----------|-------|--------|-----|
|    |                |                         | [dB (uV)]     |     | [dB (uV)]      |     | [dB (uV)] |       | (dB)   |     |
|    |                |                         | Q.P.          | AV. | Q.P.           | AV. | Q.P.      | AV.   | Q.P.   | AV. |
| 1  | 0.224          | 0.10                    | 41.12         | -   | 41.22          | -   | 62.66     | 52.66 | -21.44 | -   |
| 2  | 0.312          | 0.10                    | 34.11         | -   | 34.21          | -   | 59.92     | 49.92 | -25.71 | -   |
| 3  | 0.624          | 0.10                    | 32.49         | -   | 32.59          | -   | 56.00     | 46.00 | -23.41 | -   |
| 4  | 0.728          | 0.10                    | 33.05         | -   | 33.15          | -   | 56.00     | 46.00 | -22.85 | -   |
| 5  | 6.164          | 0.34                    | 30.72         | -   | 31.06          | -   | 60.00     | 50.00 | -28.94 | -   |
| 6  | 10.339         | 0.42                    | 37.83         | -   | 38.25          | -   | 60.00     | 50.00 | -21.75 | -   |

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

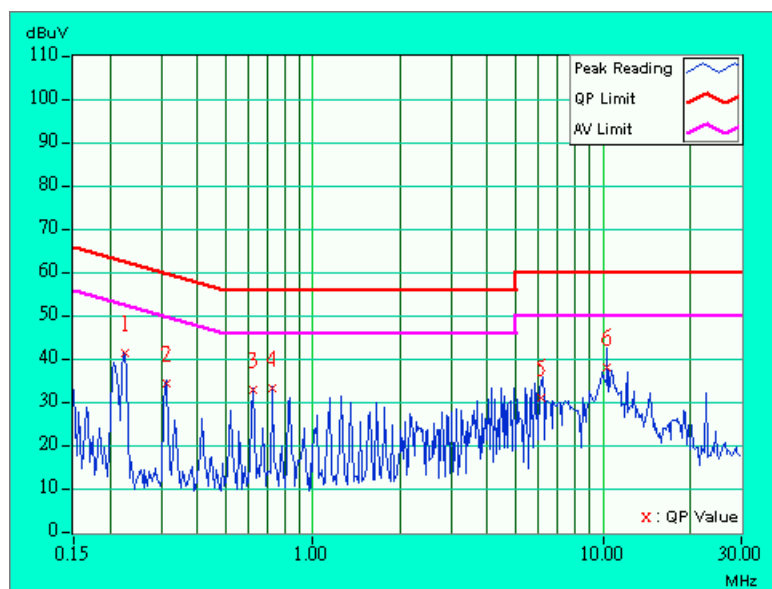
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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.



#### 4.1.8 TEST RESULTS (B)

|                          |                              |                     |          |
|--------------------------|------------------------------|---------------------|----------|
| EUT                      | MOUSE                        | MODEL               | M870U    |
|                          |                              | 6dB BANDWIDTH       | 9 kHz    |
| INPUT POWER              | 120Vac, 60 Hz                | PHASE               | Line (L) |
| ENVIRONMENTAL CONDITIONS | 28 deg. C, 60 % RH, 1005 hPa | TESTED BY: Jone Lin |          |

| No | Freq.<br>[MHz] | Corr.<br>Factor<br>(dB) | Reading Value |     | Emission Level |     | Limit     |       | Margin |     |
|----|----------------|-------------------------|---------------|-----|----------------|-----|-----------|-------|--------|-----|
|    |                |                         | [dB (uV)]     |     | [dB (uV)]      |     | [dB (uV)] |       | (dB)   |     |
|    |                |                         | Q.P.          | AV. | Q.P.           | AV. | Q.P.      | AV.   | Q.P.   | AV. |
| 1  | 0.210          | 0.10                    | 44.86         | -   | 44.96          | -   | 63.22     | 53.22 | -18.26 | -   |
| 2  | 0.240          | 0.10                    | 41.35         | -   | 41.45          | -   | 62.10     | 52.10 | -20.65 | -   |
| 3  | 0.313          | 0.10                    | 36.35         | -   | 36.45          | -   | 59.88     | 49.88 | -23.43 | -   |
| 4  | 0.732          | 0.10                    | 31.34         | -   | 31.44          | -   | 56.00     | 46.00 | -24.56 | -   |
| 5  | 4.785          | 0.34                    | 32.59         | -   | 32.93          | -   | 56.00     | 46.00 | -23.07 | -   |
| 6  | 22.571         | 1.25                    | 33.45         | -   | 34.70          | -   | 60.00     | 50.00 | -25.30 | -   |

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

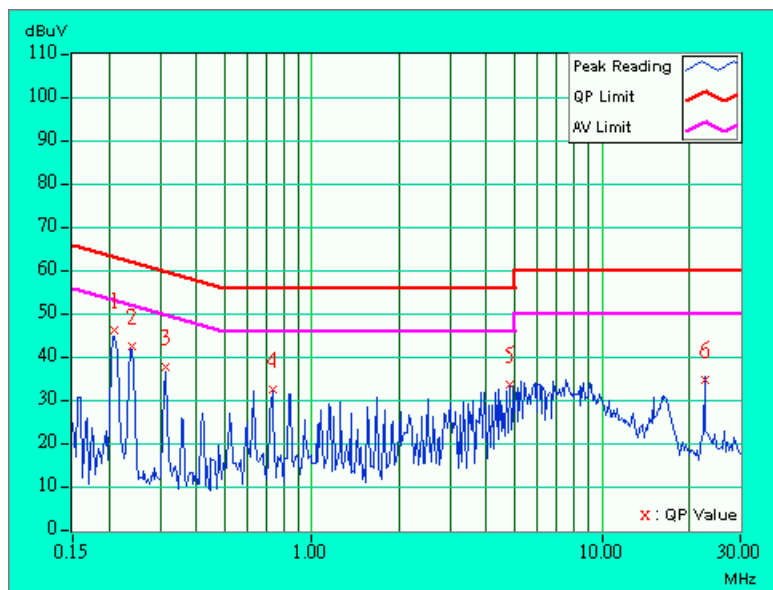
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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>EUT</b>                      | MOUSE                           | <b>MODEL</b>               | M870U       |
|                                 |                                 | <b>6dB BANDWIDTH</b>       | 9 kHz       |
| <b>INPUT POWER</b>              | 120Vac, 60 Hz                   | <b>PHASE</b>               | Neutral (N) |
| <b>ENVIRONMENTAL CONDITIONS</b> | 28 deg. C, 60 % RH,<br>1005 hPa | <b>TESTED BY:</b> Jone Lin |             |

| No | Freq.<br>[MHz] | Corr.<br>Factor<br>(dB) | Reading Value |     | Emission Level |     | Limit     |       | Margin |     |
|----|----------------|-------------------------|---------------|-----|----------------|-----|-----------|-------|--------|-----|
|    |                |                         | [dB (uV)]     |     | [dB (uV)]      |     | [dB (uV)] |       | (dB)   |     |
|    |                |                         | Q.P.          | AV. | Q.P.           | AV. | Q.P.      | AV.   | Q.P.   | AV. |
| 1  | 0.210          | 0.10                    | 45.26         | -   | 45.36          | -   | 63.21     | 53.21 | -17.85 | -   |
| 2  | 0.240          | 0.10                    | 42.49         | -   | 42.59          | -   | 62.10     | 52.10 | -19.51 | -   |
| 3  | 0.315          | 0.10                    | 36.29         | -   | 36.39          | -   | 59.85     | 49.85 | -23.46 | -   |
| 4  | 0.627          | 0.10                    | 31.42         | -   | 31.52          | -   | 56.00     | 46.00 | -24.48 | -   |
| 5  | 7.523          | 0.36                    | 33.49         | -   | 33.85          | -   | 60.00     | 50.00 | -26.15 | -   |
| 6  | 22.570         | 1.10                    | 33.57         | -   | 34.67          | -   | 60.00     | 50.00 | -25.33 | -   |

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

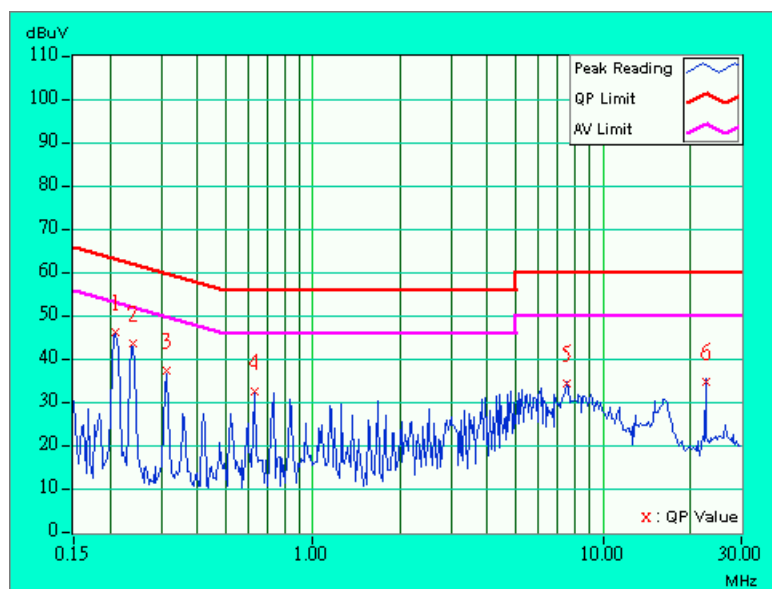
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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 FOR FREQUENCY BELOW 1000 MHz

| FREQUENCY (MHz) | Class A (at 10m) | Class B (at 10m) |
|-----------------|------------------|------------------|
|                 | dBuV/m           | dBuV/m           |
| 30 – 230        | 40               | 30               |
| 230 – 1000      | 47               | 37               |

### LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

| FREQUENCY (MHz) | Class A (dBuV/m) (at 3m) |         | Class B (dBuV/m) (at 3m) |         |
|-----------------|--------------------------|---------|--------------------------|---------|
|                 | PEAK                     | AVERAGE | PEAK                     | AVERAGE |
| Above 1000      | 80.0                     | 60.0    | 74.0                     | 54.0    |

**Note:** (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

## 4.2.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER         | MODEL NO.            | SERIAL NO.               | CALIBRATED UNTIL |
|------------------------------------|----------------------|--------------------------|------------------|
| HP Spectrum Analyzer               | 8590L                | 3544A00941               | Dec.10, 2002     |
| HP Pre-Amplifier                   | 8447D                | 2944A08312               | Aug. 19, 2002    |
| * HP Preamplifier                  | 8449B                | 3008A01201               | Dec. 06, 2002    |
| * HP Preamplifier                  | 8449B                | 3008A01292               | Aug. 21, 2002    |
| * R&S Receiver                     | ESI7                 | 100033                   | May 28, 2003     |
| SCHWARZBECK Tunable Dipole Antenna | VHA 9103<br>UHA 9105 | E101051<br>E101055       | Nov. 23, 2002    |
| * ROHDE & SCHWARZ TEST RECEIVER    | ESMI                 | 839013/007<br>839379/002 | Jan. 27, 2003    |
| * CHASE BILOG Antenna              | CBL6111A             | 1500                     | Aug. 30, 2002    |
| * SCHWARZBECK Horn Antenna         | BBHA9120-D1          | D130                     | July 3, 2003     |
| * EMCO Horn Antenna                | 3115                 | 9312-4192                | April 9, 2003    |
| * EMCO Turn Table                  | 1060-04              | 1196                     | NA               |
| * EMCO Tower                       | 1051                 | 1264                     | NA               |
| * Software                         | AS61D4               | NA                       | NA               |
| * ANRITSU RF Switches              | MP59B                | M06089                   | Aug. 30, 2002    |
| * TIMES RF cable                   | LMR-600              | CABLE-ST1-01             | Aug. 30, 2002    |

**NOTE:** 1. The measurement uncertainty is less than +/- 3.0dB, which is calculated as per the NAMAS document NIS81.

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

3. "\*" = These equipment are used for the final measurement.

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

5. The test was performed in ADT Open Site No. 1.

6. The VCCI Site Registration No. is R-236.

## 4.2.3 TEST PROCEDURE

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. 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.
- 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.
- 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.

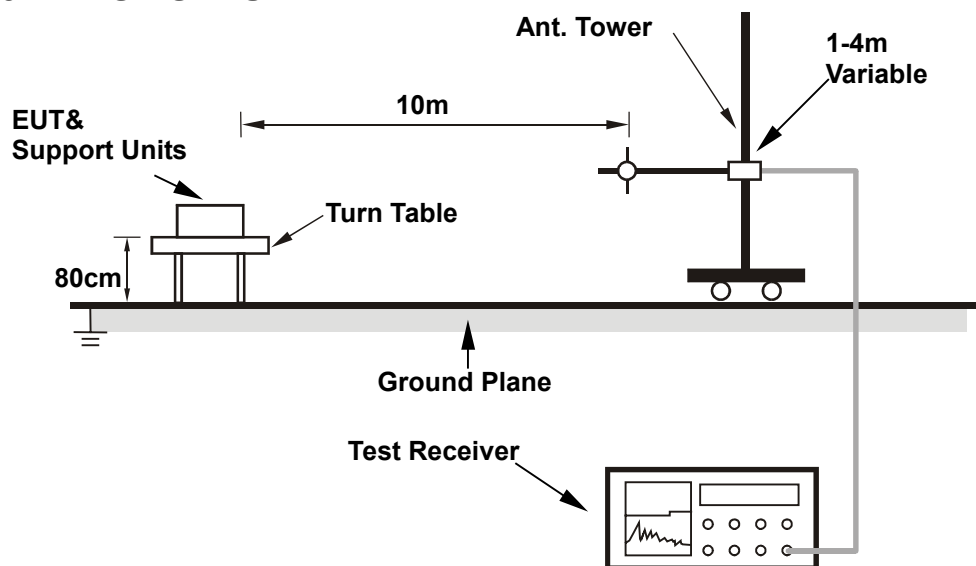
**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 300 Hz for Average detection (AV) at frequency above 1GHz.
3. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the interference antenna.

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.5 TEST SETUP



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

#### 4.2.6 EUT OPERATING CONDITIONS

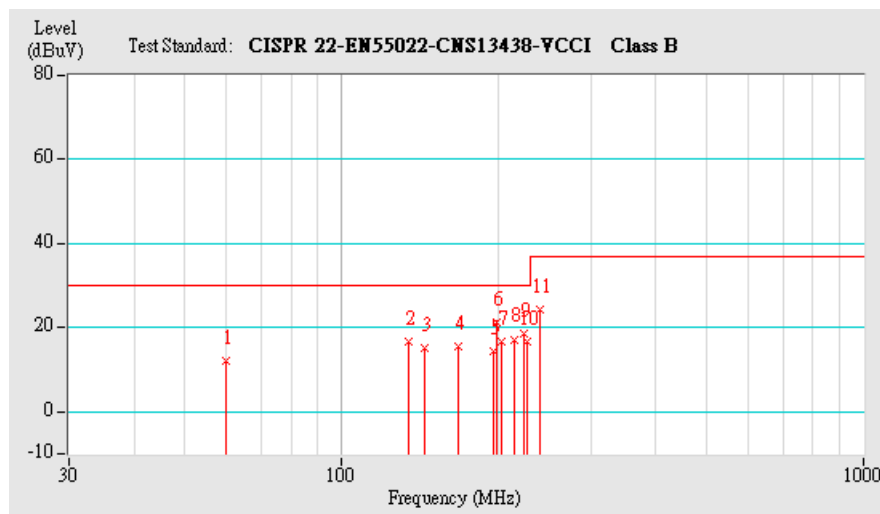
Same as 4.1.6

#### 4.2.7 TEST RESULTS (A)

|                                 |                              |                                          |                    |
|---------------------------------|------------------------------|------------------------------------------|--------------------|
| <b>EUT</b>                      | MOUSE                        | <b>MODEL</b>                             | M851U              |
|                                 |                              | <b>FREQUENCY RANGE</b>                   | 30-1000 MHz        |
| <b>INPUT POWER</b>              | 120Vac, 60 Hz                | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 75 % RH, 1005 hPa | <b>TESTED BY:</b> Jone 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                                                    | 59.88       | 12.2 QP                 | 30.00          | -17.80      | 1.00 H             | 5                    | 5.20             | 7.00                     |
| 2                                                    | 134.67      | 16.8 QP                 | 30.00          | -13.20      | 4.00 H             | 6                    | 4.00             | 12.90                    |
| 3                                                    | 144.54      | 15.3 QP                 | 30.00          | -14.70      | 4.00 H             | 6                    | 2.70             | 12.60                    |
| 4                                                    | 167.00      | 15.7 QP                 | 30.00          | -14.30      | 4.00 H             | 91                   | 4.50             | 11.20                    |
| 5                                                    | 195.88      | 14.4 QP                 | 30.00          | -15.60      | 4.00 H             | 359                  | 3.80             | 10.60                    |
| 6                                                    | 198.72      | 21.1 QP                 | 30.00          | -8.90       | 4.00 H             | 5                    | 10.50            | 10.70                    |
| 7                                                    | 201.80      | 16.8 QP                 | 30.00          | -13.20      | 4.00 H             | 36                   | 6.00             | 10.80                    |
| 8                                                    | 214.85      | 17.2 QP                 | 30.00          | -12.80      | 4.00 H             | 44                   | 5.60             | 11.60                    |
| 9                                                    | 223.33      | 18.5 QP                 | 30.00          | -11.50      | 4.00 H             | 177                  | 6.40             | 12.10                    |
| 10                                                   | 226.40      | 16.7 QP                 | 30.00          | -13.30      | 4.00 H             | 105                  | 4.40             | 12.30                    |
| 11                                                   | 239.80      | 24.2 QP                 | 37.00          | -12.80      | 4.00 H             | 217                  | 11.10            | 13.10                    |

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

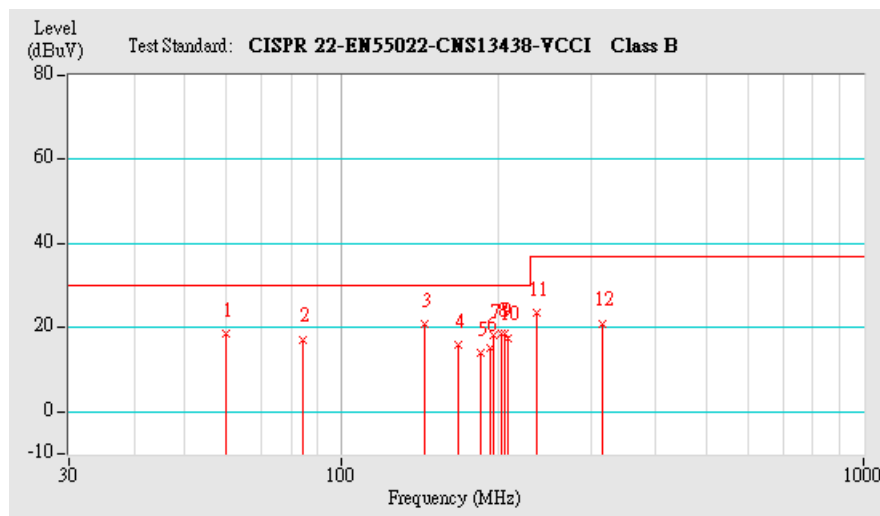


|                                 |                              |                                          |                    |
|---------------------------------|------------------------------|------------------------------------------|--------------------|
| <b>EUT</b>                      | MOUSE                        | <b>MODEL</b>                             | M851U              |
|                                 |                              | <b>FREQUENCY RANGE</b>                   | 30-1000 MHz        |
| <b>INPUT POWER</b>              | 120Vac, 60 Hz                | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 75 % RH, 1005 hPa | <b>TESTED BY:</b> Jone Lin               |                    |

#### 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   | 59.98       | 18.6 QP                 | 30.00          | -11.40      | 1.00 V             | 194                  | 11.60            | 7.00                     |
| 2   | 83.99       | 17.2 QP                 | 30.00          | -12.80      | 1.00 V             | 128                  | 8.40             | 8.90                     |
| 3   | 144.43      | 20.9 QP                 | 30.00          | -9.10       | 1.00 V             | 196                  | 8.30             | 12.60                    |
| 4   | 167.20      | 15.8 QP                 | 30.00          | -14.20      | 1.00 V             | 323                  | 4.60             | 11.20                    |
| 5   | 184.32      | 14.1 QP                 | 30.00          | -15.90      | 1.00 V             | 62                   | 3.70             | 10.40                    |
| 6   | 192.60      | 15.1 QP                 | 30.00          | -14.90      | 1.00 V             | 355                  | 4.50             | 10.50                    |
| 7   | 195.65      | 18.0 QP                 | 30.00          | -12.00      | 1.00 V             | 327                  | 7.40             | 10.60                    |
| 8   | 201.65      | 18.7 QP                 | 30.00          | -11.30      | 1.00 V             | 355                  | 7.90             | 10.80                    |
| 9   | 204.80      | 18.7 QP                 | 30.00          | -11.30      | 1.00 V             | 107                  | 7.70             | 11.00                    |
| 10  | 207.88      | 17.6 QP                 | 30.00          | -12.40      | 1.00 V             | 37                   | 6.40             | 11.20                    |
| 11  | 236.00      | 23.4 QP                 | 37.00          | -13.60      | 1.00 V             | 270                  | 10.50            | 12.90                    |
| 12  | 315.90      | 21.1 QP                 | 37.00          | -15.90      | 1.00 V             | 300                  | 5.60             | 15.40                    |

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

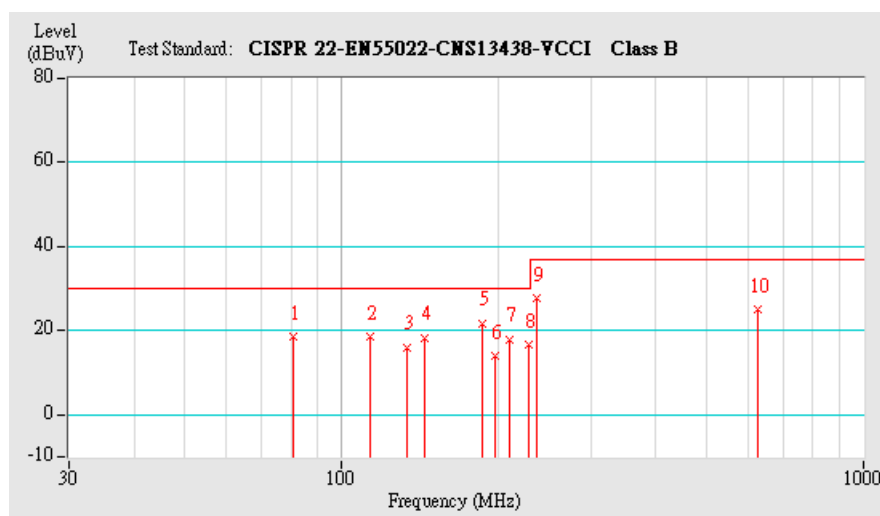


## 4.2.8 TEST RESULTS (B)

|                                 |                              |                                          |                    |
|---------------------------------|------------------------------|------------------------------------------|--------------------|
| <b>EUT</b>                      | MOUSE                        | <b>MODEL</b>                             | M870U              |
|                                 |                              | <b>FREQUENCY RANGE</b>                   | 30-1000 MHz        |
| <b>INPUT POWER</b>              | 120Vac, 60 Hz                | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 70 % RH, 1005 hPa | <b>TESTED BY:</b> Jone 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                                                    | 80.56         | 18.6 QP                 | 30.00          | -11.40       | 4.00 H             | 256                  | 10.10            | 8.50                     |
| 2                                                    | 113.67        | 18.5 QP                 | 30.00          | -11.50       | 4.00 H             | 201                  | 6.10             | 12.40                    |
| 3                                                    | 132.99        | 16.1 QP                 | 30.00          | -13.90       | 4.00 H             | 74                   | 3.20             | 12.90                    |
| 4                                                    | 144.16        | 18.4 QP                 | 30.00          | -11.60       | 4.00 H             | 53                   | 5.80             | 12.60                    |
| <b>5</b>                                             | <b>186.38</b> | <b>21.8 QP</b>          | <b>30.00</b>   | <b>-8.20</b> | <b>4.00 H</b>      | <b>256</b>           | <b>11.40</b>     | <b>10.40</b>             |
| 6                                                    | 196.84        | 14.0 QP                 | 30.00          | -16.00       | 4.00 H             | 140                  | 3.40             | 10.60                    |
| 7                                                    | 209.15        | 18.0 QP                 | 30.00          | -12.00       | 4.00 H             | 5                    | 6.80             | 11.20                    |
| 8                                                    | 228.88        | 16.6 QP                 | 30.00          | -13.40       | 4.00 H             | 356                  | 4.10             | 12.50                    |
| 9                                                    | 236.21        | 27.7 QP                 | 37.00          | -9.30        | 3.68 H             | 135                  | 14.80            | 12.90                    |
| 10                                                   | 626.50        | 25.0 QP                 | 37.00          | -12.00       | 1.12 H             | 252                  | 0.90             | 24.10                    |

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

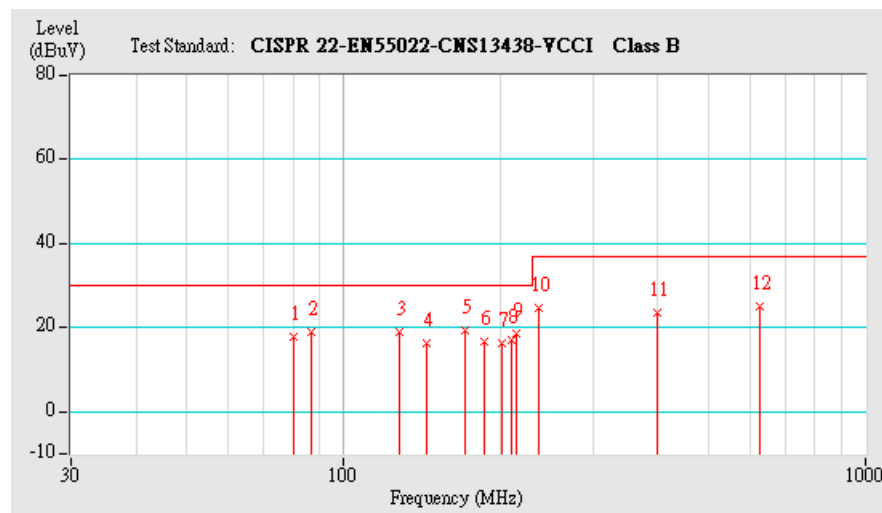


|                                 |                              |                                          |                    |
|---------------------------------|------------------------------|------------------------------------------|--------------------|
| <b>EUT</b>                      | MOUSE                        | <b>MODEL</b>                             | M870U              |
|                                 |                              | <b>FREQUENCY RANGE</b>                   | 30-1000 MHz        |
| <b>INPUT POWER</b>              | 120Vac, 60 Hz                | <b>DETECTOR FUNCTION &amp; BANDWIDTH</b> | Quasi-Peak, 120kHz |
| <b>ENVIRONMENTAL CONDITIONS</b> | 23 deg. C, 70 % RH, 1005 hPa | <b>TESTED BY:</b> Jone Lin               |                    |

### 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   | 80.05       | 17.7 QP                 | 30.00          | -12.30      | 1.00 V             | 194                  | 9.20             | 8.40                     |
| 2   | 86.41       | 19.1 QP                 | 30.00          | -10.90      | 1.00 V             | 348                  | 9.90             | 9.20                     |
| 3   | 127.64      | 19.0 QP                 | 30.00          | -11.00      | 1.00 V             | 105                  | 6.20             | 12.90                    |
| 4   | 144.12      | 16.2 QP                 | 30.00          | -13.80      | 1.00 V             | 185                  | 3.60             | 12.60                    |
| 5   | 170.59      | 19.2 QP                 | 30.00          | -10.80      | 1.00 V             | 290                  | 8.30             | 10.90                    |
| 6   | 186.50      | 16.7 QP                 | 30.00          | -13.30      | 1.00 V             | 302                  | 6.30             | 10.40                    |
| 7   | 200.38      | 16.4 QP                 | 30.00          | -13.60      | 1.00 V             | 181                  | 5.70             | 10.70                    |
| 8   | 209.23      | 17.0 QP                 | 30.00          | -13.00      | 1.00 V             | 305                  | 5.70             | 11.30                    |
| 9   | 214.10      | 18.5 QP                 | 30.00          | -11.50      | 1.00 V             | 205                  | 6.90             | 11.60                    |
| 10  | 236.00      | 24.8 QP                 | 37.00          | -12.20      | 1.00 V             | 123                  | 12.00            | 12.90                    |
| 11  | 398.30      | 23.6 QP                 | 37.00          | -13.40      | 1.00 V             | 68                   | 5.60             | 18.00                    |
| 12  | 628.00      | 25.1 QP                 | 37.00          | -11.90      | 3.03 V             | 99                   | 1.00             | 24.10                    |

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

### CONDUCTED EMISSION TEST



## RADIATED EMISSION TEST





## 6 APPENDIX - INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

|                    |                 |
|--------------------|-----------------|
| <b>USA</b>         | FCC, NVLAP, UL  |
| <b>Germany</b>     | TUV Rheinland   |
| <b>Japan</b>       | VCCI            |
| <b>New Zealand</b> | MoC             |
| <b>Norway</b>      | NEMKO           |
| <b>Canada</b>      | INDUSTRY CANADA |
| <b>R.O.C.</b>      | CNLA, BSMI      |

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).

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

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