

# FCC ID TEST REPORT

According to

## FCC Part 15 Subpart C, Intentional Radiators

EUT      Type      **RF Mouse**

Transmitter (TX)      **1) Model No.: CM108**

**2) FCC ID: NHMCM108RF**

**3) Power Supply: DC 3V, battery Type AAA, 1.5Vdc x 2**

Receiver (RX)      **1) Model No.: CKM001**

**2) FCC ID: N/A, (under DoC)**

**3) Power Supply: DC 5V from PS/2 connector of PC**

Applicant Name:      **CRE Technology Co., Ltd..**

Address      See the General Information for details.

Test Date      :    08-14-2001

Issued Date      :      SEP. 03, 2001

Test Engineer    :    STEVEN    CHEN

NVLAP Signature :      Peter Kao  
Peter Kao / Director

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- The report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States government.
- This report is applicable only for EUT Model which described in page 4 .
- The testing result in this report are traceable to national or international standard .

### PEP TESTING LABORATORY

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## Table of Contents

|     |   |    |
|-----|---|----|
| 1.  | GENERAL INFORMATION                     | 3  |
| 2.  | PRODUCT INFORMATION                     | 4  |
| 3.  | EUT DESCRIPTION AND TEST METHODS        | 5  |
| 4.  | MODIFICATION(S)                         | 6  |
| 5.  | TEST SOFTWARE USED                      | 6  |
| 6.  | SUPPORT EQUIPMENT USED                  | 7  |
| 7.  | DESCRIPTION OF CONDUCTED EMISSIONS TEST | 8  |
| 8.  | DESCRIPTION OF RADIATED EMISSIONS TEST  | 9  |
| 9.  | CONDUCTED EMISSIONS TEST SETUP PHOTO.   | 12 |
| 10. | CONDUCTED EMISSIONS TEST DATA           | 13 |
| 11. | RADIATED EMISSIONS TEST SETUP PHOTO.    | 16 |
| 12. | RADIATED EMISSIONS TEST DATA            | 17 |
| 13. | OCCUPIED BANDWIDTH PLOT DATA            | 21 |
| 14. | LIST OF MEASURED INSTRUMENTS            | 23 |
| 15. | DUTIES OF THE RESPONSIBLE PARTY         | 24 |
| 16. | FCC ID LABEL SAMPLE                     | 25 |
| 17. | INFORMATION TO THE USER                 | 26 |
| 18. | EUT EXTERNAL PHOTOS                     | 27 |
| 18. | EUT INTERNAL PHOTOS                     | 28 |

# 1. General Information

Measurement of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC Part 2 and 15.

**a) EUT Transmitter (TX):**

**Model No.:** CM108

**FCC ID:** NHMCM108RF

**b) EUT Receiver (RX):**

**Model No.:** CKM001

**FCC ID:** N/A, (under DoC)

**c) Applicant Name/Address:** CRE TECHNOLOGY CO., LTD.

7F, NO. 22, WU-CHUAN 7<sup>TH</sup> ROAD, WU-KU  
INDUSTRIAL PARK, TAIPEI, TAIWAN, R. O. C.

**Contact Person:** AARON PENG / ELECTRONIC ENGINEER

**Phone No.:** 886-2-22902138 **Fax No.:** 886-2-22990233

**d) Manufacturer Name/Address:** CRE TECHNOLOGY CO., LTD.

7F, NO. 22, WU-CHUAN 7<sup>TH</sup> ROAD, WU-KU  
INDUSTRIAL PARK, TAIPEI, TAIWAN, R. O. C.

- ✧ Regulation: FCC Parts 2 and 15
- ✧ Limitation: Part 15, Section 15.227, 15.207 and 15.209, Class B
- ✧ Test Procedure: ANSI C63.4-1992
- ✧ Place of Test: PEP Testing Laboratory  
12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih.  
Taipei Hsien, Taiwan, R. O. C.  
TEL : 8862-26922097 FAX : 8862-26956236

**Measurement Uncertainty :**

The uncertainty of the testing result is given as below . The method of uncertainty Calculation is based on NIST Technical Note 1297 .

|                              |           |           |
|------------------------------|-----------|-----------|
| Frequency ( MHz )            | 0.15 ~ 30 | 30 ~ 1000 |
| Combined Uncertainty $\mu_c$ | 1.77 (dB) | 2.08 (dB) |

## 2. Product Information

- a. EUT Type: RF Mouse
- b. Transmitter Model: CM108 Receiver Model: CKM001
- c. TX FCC ID: NHMCM108RF RX FCC ID: N/A, (under DoC)
- d. TX Channel No. : Two RX Channel No. : Two
- e. TX Working Freq. : 27.035 / 27.205MHz RX Working Freq.: 27.035 / 27.205MHz
- f. TX Modulation : FSK RX Modulation :
- g. TX Crystal / Osc. : 6MHz RX Crystal / Osc. : 8MHz
- h. TX Port(s) : N/A RX Port(s) : PS/2
- i. TX Transmitting Power :
- j. TX Power Supply : DC 3V (1.5V  $\times$  2) RX Power Supply : DC 5V from PS/2
- j. TX Case : ABS TX Case : ABS
- k. EUT Condition : ☐ Prototype ☒ Engineering ☐ Production
- l. EUT Received Date : Aug. 10, 2001

### 3. EUT Description and Test Methods

- (A) The EUT is Wireless RF Mouse, FCC ID: NHMCM108RF, Model CM108. It consists of one wireless transmitter supplied from DC 3V (Battery Type AAA, 1.5V x2), and one receiver model CKM001 connected to PS/2 rated DC 5V from PC. The transmitting frequency is operating either 27.035MHz or 27.205MHz, which is controlled by one select switch at the bottom of Transmitter and Receiver units; we pre-tested both of two frequencies and took 27.205MHz as worst-case for final test, and the worst-case test result was provided in this report. The effective transmitting distance of EUT system is more than 3 meters. We located both transmitter and receiver on turntable under testing. For more detail information about the EUT, please refer to the user's manual.
- (B) Test Method: EUT system including Transmitter and Receiver link with PC system are setup as a complete test system on turntable. The receiver of EUT connected to PS/2 port of PC system, the PC operating system was setup to detect and drive every peripheral devices including EUT. Then, we pressed the button on the transmitter to enable RF mouse under Control panel of WIN98 for Tx-On Mode, and ran "EMITEST" for Tx-Off Mode, and the worst-case test data as ANSI C63.4 requirement was recorded and provided in this report.
- (C) Test Mode: (1) For Conducted EMI---"Tx-Off" Mode  
(2) For Radiated EMI---"Tx-On" and "Tx-Off" Mode
- (D) At the frequencies where the peak values of the emission exceeded the quasi-peak limit, the emissions were also measured with the quasi-peak detectors. The average detector also measured the emission either (A) quasi-peak values were under quasi-peak limit but exceeded average limit, or (B) peak values were under quasi-peak limit but exceeded average limit.
- (E) Due to EUT system is Desktop type not Handheld type, only one orthogonal plane is tested for detecting the required EMI testing data.

## 4. Modification(s):

N/A

## 5. Test Software Used

EMITEST.EXE program generates a complete line of continuously repeating “H” pattern is used as the software during test.

## 6. Support Equipment Used

- |                                   |  |
|-----------------------------------|--|
| <b>1. Personal Computer (PC1)</b> | <b>CPU :</b> Intel P III 733 MHz<br><b>FCC ID :</b> Declaration of Conformity(DoC)<br><b>Manufacturer :</b> ASUS INC.<br><b>Model Number :</b> P2-99<br><b>Power Supply :</b> Switching<br><b>Power Cord :</b> Non-Shielded, Detachable, 1.8m<br><b>Data Cable :</b> N/A                   |
| <b>2. Monitor (MON1 15")</b>      | <b>FCC ID :</b> Declaration of Conformity(DoC)<br><b>Manufacturer :</b> SAMSUNG<br><b>Model Number :</b> 550S<br><b>Power Supply :</b> Switching<br><b>Power Cord :</b> Non-Shielded, Detachable, 1.8m<br><b>Data Cable :</b> 1 > Shielded , Non-detachable,1.2m<br>2 > Back Shell : Metal |
| <b>3. Printer (PRN1)</b>          | <b>FCC ID :</b> B94C2642X<br><b>Manufacturer :</b> Hewlett-Packard<br><b>Model Number :</b> C2642E<br><b>Power Supply :</b> Linear, 30Vdc O/P<br><b>Power Cable :</b> Non-Shielded , Detachable,1.8m<br><b>Data Cable :</b> 1 > Shielded , Detachable,1.2m<br>2 > Back Shell : Metal       |
| <b>4. Modem (MOD1) × 2</b>        | <b>FCC ID :</b> IFAXDM1414<br><b>Manufacturer :</b> ACEEX<br><b>Model Number :</b> 1414<br><b>Power Supply :</b> Linear, 9Vac O/P<br><b>Power Cable :</b> Non-Shielded , Detachable,1.7m<br><b>Data Cable :</b> 1 > Shielded , Detachable,1m<br>2 > Back Shell : Metal                     |
| <b>5. Keyboard (PS/2)</b>         | <b>FCC ID :</b> NHMCK101RF<br><b>Manufacturer :</b> CRE<br><b>Model Number :</b> CK101<br><b>Power Supply :</b> DC6V, Battery Type AA1.5V × 4<br><b>Power Cord :</b> N/A<br><b>Data Cable :</b> N/A, Wireless RF<br><b>Note :</b> It is being applied for FCC ID of the sane time          |

## 7. Description of Conducted Emissions Test

### 7.1 Conducted Emissions Limits

| Frequency  | Maximum RF Voltage in dB(uV) |         |            |         |
|------------|------------------------------|---------|------------|---------|
|            | FCC Part 15, Subpart C       |         | CISPR 22   |         |
| MHz        | QUASI-PEAK                   | AVERAGE | QUASI-PEAK | AVERAGE |
| 0.15 – 0.5 | --                           | --      | 66-56      | 56-46   |
| 0.5 – 5.0  | 48                           | 61      | 56         | 46      |
| 5.0 - 30   | 48                           | 61      | 60         | 50      |

Remarks : In the above table, the tighter limit applies at the band edges.



## 8. Description of Radiated Emissions Test

### 8.1 Radiated Emissions

Preliminary measurements were made indoors chamber at 3 meter using broadband antennas, broadband amplifier, and spectrum analyzer to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna were noted for each frequency found. The spectrum was scanned from 30 to 1000 MHz using logbicon antenna. Above 1GHz, linearly polarized double ridge horn antenna was used.

Final measurements were made outdoors at 3-meter test range using logbicon antenna and horn antenna. The test equipment was placed on a wooden bench situated on a 1.5x1 meter area adjacent to the measurement area. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. Each frequency found during pre-scan measurements was re-examined and investigated using Quasi-Peak Adapter. The detector function was set to CISPR quasi-peak mode and the bandwidth of the receiver was set to 120kHz.

The turntable containing the system was rotated; the antenna height was varied 1 to 4 meters and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by: varying mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and/or support equipment, and powering the monitor from the floor mounted outlet box and the computer aux AC outlet , if applicable; and changing the polarity of the antenna, whichever determined the worst-case emission. Photographs of the worst-case emission can be seen in radiated emission test photo.

[illegible]

1. Interconnecting cables which hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.
2. I/O cables which are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.
3. If LISN are kept in the test setup for radiated emissions, it is preferred that they be installed under the ground if requires receptacle flush with the ground plane.
4. Cables of hand-operated devices, such as keyboards, KEYPADS, etc., have to be placed as close as possible to the controller.
5. Non-EUT components of EUT system being tested.
6. The rear of all components of the system under test shall be located flush with the rear of the table.
7. No vertical conducting wall used.
8. Power cords drape to the floor and are routed over to receptacle.

### **8.3 Radiated Emission Limits**

Limits for radiated disturbance of  
Class B ITE or Intentional Radiator  
At a measuring distance of 3 m

| Frequency<br>MHz  | Field Strength<br>dB( $\mu$ V/m) or uV/m |     |
|---|--|-----|
| 30 to 88  | 40                                       | 100 |
| 88 to 216   | 43.5                                     | 150 |
| 216 to 960  | 46                                       | 200 |
| Above 960   | 56                                       | 500 |
| NOTES<br>1 The lower limit shall apply at the transition frequency.<br>2 Additional provisions may be required for cases where interference occurs. |  |     |

## 9. Conducted Emissions Test Setup Photo.

< Front View >



<Rear View >



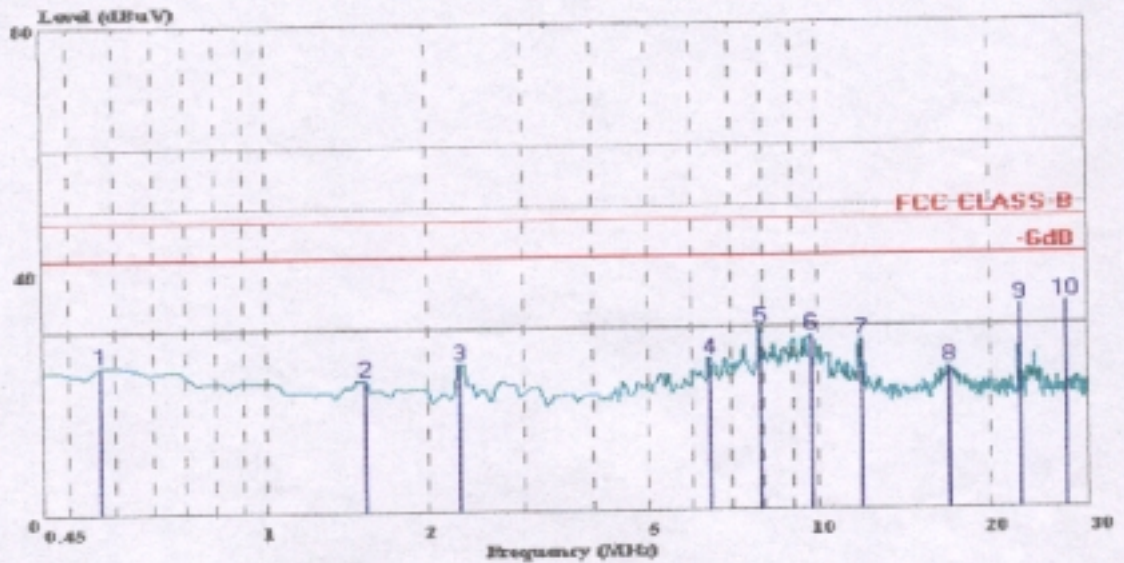




# 璋鑫科技有限公司 PEP Testing Laboratory

Data#: 168 File#: Fccb.emi

Date: 2001-09-14 Time: 21:09:24



Trace: 167  
 Site : Conduction NO.1 (Michael Wang)  
 Condition: FCC CLASS-B LISN.L (16A) LINE  
 Eut : CM108+CKM001+PC SYSTEM  
 Power : AC120V 60Hz  
 Memo : Peak Value

Page: 1

|    | Freq   | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark |
|----|--------|-------|------------|------------|------------|--------------|------------|--------|
|    | MHz    | dBuV  | dB         | dBuV       | dBuV       | dB           | dB         |        |
| 1  | 0.568  | 24.40 | -23.60     | 48.00      | 24.20      | 0.10         | 0.10       |        |
| 2  | 1.632  | 21.87 | -26.13     | 48.00      | 21.60      | 0.10         | 0.17       |        |
| 3  | 2.400  | 24.48 | -23.52     | 48.00      | 24.19      | 0.13         | 0.16       |        |
| 4  | 6.567  | 24.81 | -23.19     | 48.00      | 24.40      | 0.31         | 0.10       |        |
| 5  | 8.015  | 29.85 | -18.15     | 48.00      | 29.40      | 0.35         | 0.10       |        |
| 6  | 9.817  | 28.78 | -19.22     | 48.00      | 28.20      | 0.40         | 0.18       |        |
| 7  | 12.063 | 27.69 | -20.31     | 48.00      | 27.00      | 0.49         | 0.20       |        |
| 8  | 17.028 | 23.15 | -24.85     | 48.00      | 22.20      | 0.65         | 0.30       |        |
| 9  | 22.642 | 33.33 | -14.67     | 48.00      | 32.20      | 0.81         | 0.32       |        |
| 10 | 27.370 | 33.76 | -14.24     | 48.00      | 32.59      | 0.85         | 0.32       |        |

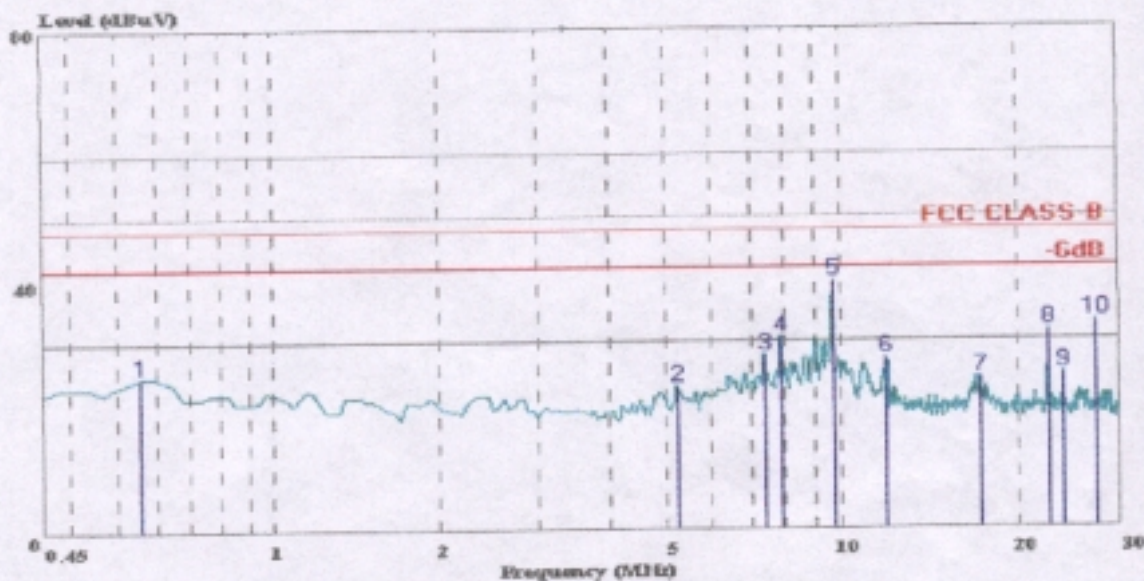




# 緯鑫科技有限公司 PEP Testing Laboratory

Data#: 162 File#: Fccb.emi

Date: 2001-08-14 Time: 21:03:22



Trace: 161

Site : Conduction NO.1 (Michael Wang)  
 Condition: FCC CLASS-B LISN.N(16A) NEUTRAL  
 Eut : CM108+CKM001+PC SYSTEM  
 Power : AC120V 60Hz  
 Memo : Peak Value

Page: 1

|    | Freq   | Level | Over   | Limit | Read  | Probe  | Cable |        |
|----|--------|-------|--------|-------|-------|--------|-------|--------|
|    | MHz    | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark |
|    | MHz    | dBuV  | dB     | dBuV  | dBuV  | dB     | dB    |        |
| 1  | 0.657  | 24.60 | -23.40 | 48.00 | 24.40 | 0.10   | 0.10  |        |
| 2  | 5.355  | 23.06 | -24.94 | 48.00 | 22.80 | 0.16   | 0.10  |        |
| 3  | 7.493  | 27.74 | -20.26 | 48.00 | 27.40 | 0.24   | 0.10  |        |
| 4  | 8.015  | 30.55 | -17.45 | 48.00 | 30.20 | 0.25   | 0.10  |        |
| 5  | 9.817  | 39.68 | -8.32  | 48.00 | 39.20 | 0.30   | 0.18  |        |
| 6  | 12.063 | 27.35 | -20.65 | 48.00 | 26.80 | 0.35   | 0.20  |        |
| 7  | 17.323 | 23.95 | -24.05 | 48.00 | 23.20 | 0.45   | 0.30  |        |
| 8  | 22.642 | 31.67 | -16.33 | 48.00 | 30.79 | 0.56   | 0.32  |        |
| 9  | 24.001 | 24.68 | -23.32 | 48.00 | 23.80 | 0.58   | 0.30  |        |
| 10 | 27.370 | 33.06 | -14.94 | 48.00 | 32.19 | 0.55   | 0.32  |        |

# 11. Radiated Emissions Test Setup Photo.

< FRONT VIEW >



< REAR VIEW >





## 12. Radiated Emissions Test Data

**EUT Models : CKM001+PC SYSTEM**

**Frequency range : 30MHz to 1GHz**

**Detector : Quasi-Peak Value**

**Frequency range : above 1GHz**

**Detector : Quasi-Peak/Average Value**

**Temperature : 29° C**

**R. Humidity : 61 %**

**Memo : TX OFF**

**Antenna polarization : HORIZONTAL ; Test distance : 3m ;**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Over<br>Limit<br>(dB) | Limit<br>Line<br>(dBuV/m) | Read<br>Level<br>(dB) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Azimuth<br>(° angle) | Antenna<br>High(m) |
|----------------|-------------------|-----------------------|---------------------------|-----------------------|-----------------------------|-----------------------|--------------------------|----------------------|--------------------|
| 37.103         | 30.48             | - 9.52                | 40.00                     | 33.30                 | 17.08                       | 0.19                  | 20.09                    | 175.1                | 4.0                |
| 111.113        | 24.53             | -18.97                | 43.50                     | 32.28                 | 11.67                       | 0.66                  | 20.08                    | 179.6                | 4.0                |
| 149.002        | 27.35             | -16.15                | 43.50                     | 36.48                 | 9.83                        | 0.90                  | 19.86                    | 183.2                | 4.0                |
| 169.531        | 26.39             | -17.11                | 43.50                     | 35.99                 | 9.13                        | 1.00                  | 19.73                    | 170.5                | 4.0                |
| 227.929        | 25.37             | -20.63                | 46.00                     | 34.15                 | 9.66                        | 1.33                  | 19.77                    | 171.8                | 4.0                |
| 239.932        | 24.71             | -21.29                | 46.00                     | 31.36                 | 11.33                       | 1.42                  | 19.40                    | 176.2                | 4.0                |
| 262.805        | 26.47             | -19.53                | 46.00                     | 30.16                 | 14.79                       | 1.56                  | 20.04                    | 175.9                | 4.0                |
| 321.580        | 27.60             | -18.40                | 46.00                     | 32.35                 | 13.62                       | 1.75                  | 20.12                    | 173.3                | 3.9                |
| 498.469        | 29.95             | -16.05                | 46.00                     | 30.50                 | 17.55                       | 2.30                  | 20.40                    | 178.1                | 3.8                |
| 531.078        | 29.94             | -16.06                | 46.00                     | 29.42                 | 18.26                       | 2.33                  | 20.07                    | 175.2                | 3.9                |

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

**EUT Models : CKM001+PC SYSTEM**  
**Frequency range : 30MHz to 1GHz**      **Detector : Quasi-Peak Value**  
**Frequency range : above 1GHz**      **Detector : Quasi-Peak/Average Value**  
**Temperature : 29° C**      **R. Humidity : 61 %**  
**Memo : TX OFF**

**Antenna polarization : VERTICAL ; Test distance : 3m ;**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Over<br>Limit<br>(dB) | Limit<br>Line<br>(dBuV/m) | Read<br>Level<br>(dB) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Azimuth<br>(° angle) | Antenna<br>High(m) |
|----------------|-------------------|-----------------------|---------------------------|-----------------------|-----------------------------|-----------------------|--------------------------|----------------------|--------------------|
| 37.102         | 25.36             | -14.64                | 40.00                     | 28.18                 | 17.08                       | 0.19                  | 20.09                    | 179.6                | 1.0                |
| 111.100        | 26.41             | -17.09                | 43.50                     | 34.16                 | 11.67                       | 0.66                  | 20.08                    | 173.8                | 1.0                |
| 149.002        | 22.87             | -20.63                | 43.50                     | 32.00                 | 9.83                        | 0.90                  | 19.86                    | 175.2                | 1.0                |
| 169.531        | 25.39             | -18.11                | 43.50                     | 34.99                 | 9.13                        | 1.00                  | 19.73                    | 179.3                | 1.0                |
| 227.926        | 27.50             | -18.50                | 46.00                     | 36.28                 | 9.66                        | 1.33                  | 19.77                    | 170.5                | 1.0                |
| 239.933        | 23.94             | -22.06                | 46.00                     | 30.59                 | 11.33                       | 1.42                  | 19.40                    | 171.8                | 1.0                |
| 262.805        | 26.47             | -19.53                | 46.00                     | 30.16                 | 14.79                       | 1.56                  | 20.04                    | 176.4                | 1.0                |
| 300.365        | 26.97             | -19.03                | 46.00                     | 32.56                 | 13.01                       | 1.70                  | 20.30                    | 173.2                | 1.1                |
| 321.580        | 27.68             | -18.32                | 46.00                     | 32.43                 | 13.62                       | 1.75                  | 20.12                    | 179.5                | 1.1                |
| 498.467        | 29.11             | -16.89                | 46.00                     | 29.66                 | 17.55                       | 2.30                  | 20.40                    | 176.2                | 1.1                |

Note :

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

**EUT Models : CM108+CKM001+PC SYSTEM**  
**Frequency range : 30MHz to 1GHz**      **Detector : Quasi-Peak Value**  
**Frequency range : above 1GHz**      **Detector : Quasi-Peak/Average Value**  
**Temperature : 29° C**      **R. Humidity : 61 %**  
**Memo : TX ON**

**Antenna polarization : HORIZONTAL ; Test distance : 3m ;**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Over<br>Limit<br>(dB) | Limit<br>Line<br>(dBuV/m) | Read<br>Level<br>(dB) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Azimuth<br>(° angle) | Antenna<br>High(m) |
|----------------|-------------------|-----------------------|---------------------------|-----------------------|-----------------------------|-----------------------|--------------------------|----------------------|--------------------|
| 27.216         | 47.83             | -32.17                | 80.00                     | 44.75                 | 22.20                       | 0.88                  | 20.00                    | 210.7                | 3.8                |
| 37.101         | 26.58             | -13.42                | 40.00                     | 29.40                 | 17.08                       | 0.19                  | 20.09                    | 219.3                | 4.0                |
| 121.308        | 24.87             | -18.63                | 43.50                     | 32.10                 | 11.94                       | 0.70                  | 19.87                    | 217.4                | 4.0                |
| 144.999        | 24.57             | -18.93                | 43.50                     | 33.02                 | 10.35                       | 0.90                  | 19.70                    | 213.5                | 4.0                |
| 169.567        | 25.77             | -17.73                | 43.50                     | 35.37                 | 9.13                        | 1.00                  | 19.73                    | 216.9                | 4.0                |
| 234.999        | 25.40             | -20.60                | 46.00                     | 33.27                 | 10.65                       | 1.38                  | 19.90                    | 215.2                | 4.0                |
| 240.705        | 26.73             | -19.27                | 46.00                     | 33.39                 | 11.41                       | 1.43                  | 19.50                    | 217.3                | 4.0                |
| 261.755        | 27.51             | -18.49                | 46.00                     | 31.34                 | 14.60                       | 1.55                  | 19.98                    | 210.8                | 4.0                |
| 321.583        | 26.60             | -19.40                | 46.00                     | 31.35                 | 13.62                       | 1.75                  | 20.12                    | 211.9                | 3.8                |
| 440.062        | 26.87             | -19.13                | 46.00                     | 28.57                 | 16.56                       | 2.07                  | 20.33                    | 215.4                | 3.8                |
| 498.918        | 28.85             | -17.15                | 46.00                     | 29.40                 | 17.55                       | 2.30                  | 20.40                    | 218.2                | 3.9                |

Note :

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

**EUT Models : CM108+CKM001+PC SYSTEM**  
**Frequency range : 30MHz to 1GHz**      **Detector : Quasi-Peak Value**  
**Frequency range : above 1GHz**      **Detector : Quasi-Peak/Average Value**  
**Temperature : 29° C**      **R. Humidity : 61 %**  
**Memo : TX ON**

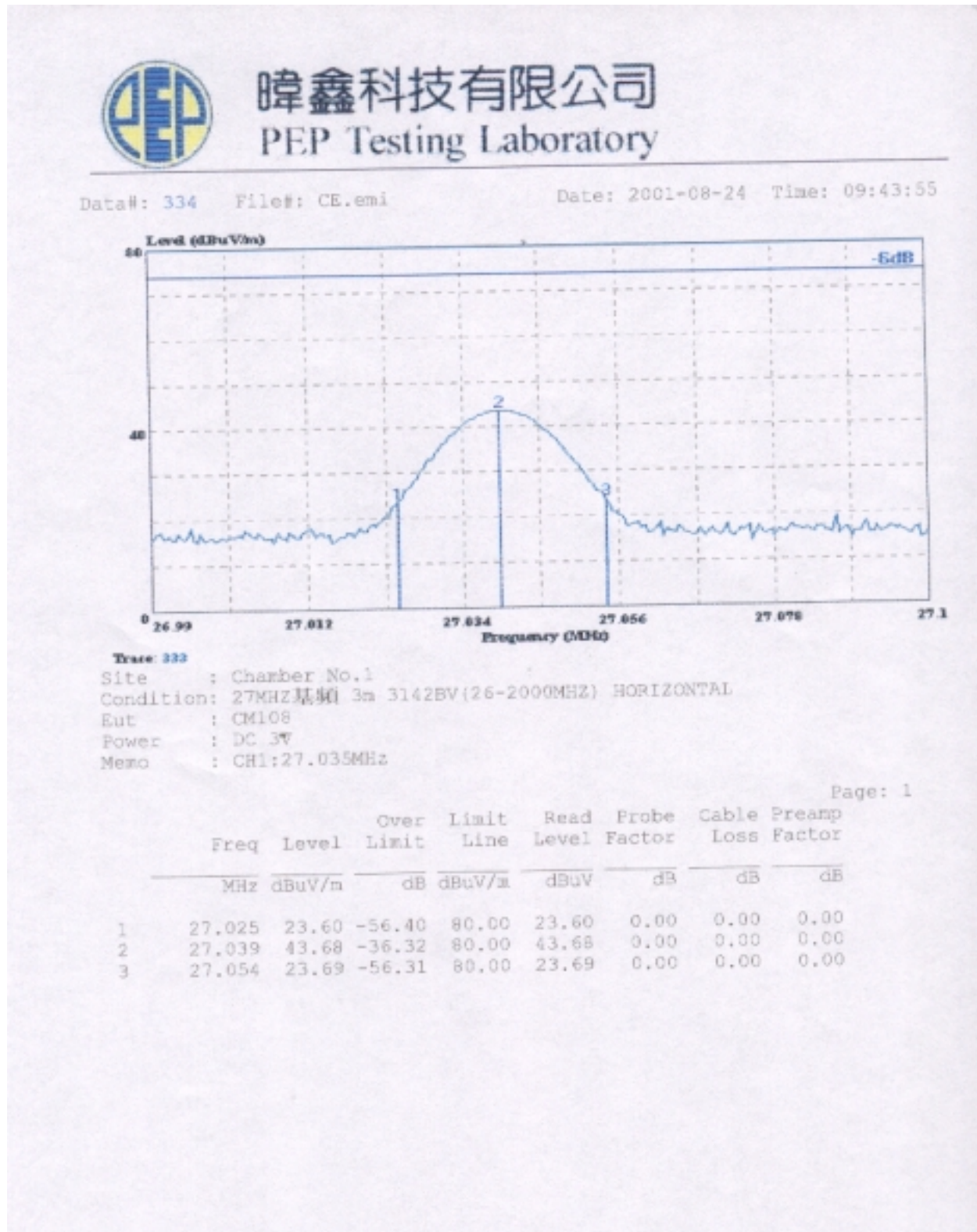
**Antenna polarization : VERTICAL ; Test distance : 3m ;**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Over<br>Limit<br>(dB) | Limit<br>Line<br>(dBuV/m) | Read<br>Level<br>(dB) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Azimuth<br>(° angle) | Antenna<br>High(m) |
|----------------|-------------------|-----------------------|---------------------------|-----------------------|-----------------------------|-----------------------|--------------------------|----------------------|--------------------|
| 27.213         | 39.65             | -40.35                | 80.00                     | 36.57                 | 22.20                       | 0.88                  | 20.00                    | 217.5                | 1.1                |
| 37.101         | 28.76             | -11.24                | 40.00                     | 31.58                 | 17.08                       | 0.19                  | 20.09                    | 216.3                | 1.0                |
| 64.841         | 25.76             | -14.24                | 40.00                     | 40.11                 | 5.05                        | 0.50                  | 19.90                    | 217.8                | 1.0                |
| 121.308        | 23.14             | -20.36                | 43.50                     | 30.37                 | 11.94                       | 0.70                  | 19.87                    | 211.6                | 1.0                |
| 144.988        | 25.55             | -17.95                | 43.50                     | 34.00                 | 10.35                       | 0.90                  | 19.70                    | 210.9                | 1.0                |
| 169.566        | 25.15             | -18.35                | 43.50                     | 34.75                 | 9.13                        | 1.00                  | 19.73                    | 215.2                | 1.0                |
| 234.998        | 26.60             | -19.40                | 46.00                     | 34.47                 | 10.65                       | 1.38                  | 19.90                    | 213.8                | 1.0                |
| 240.705        | 24.39             | -21.61                | 46.00                     | 31.05                 | 11.41                       | 1.43                  | 19.50                    | 211.4                | 1.0                |
| 440.065        | 28.40             | -17.60                | 46.00                     | 30.10                 | 16.56                       | 2.07                  | 20.33                    | 213.7                | 1.1                |
| 484.492        | 27.62             | -18.38                | 46.00                     | 28.62                 | 16.92                       | 2.24                  | 20.16                    | 215.9                | 1.1                |
| 498.917        | 28.44             | -17.56                | 46.00                     | 28.99                 | 17.55                       | 2.30                  | 20.40                    | 216.3                | 1.1                |

Note :

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

## 13. Occupied Bandwidth Plot Data

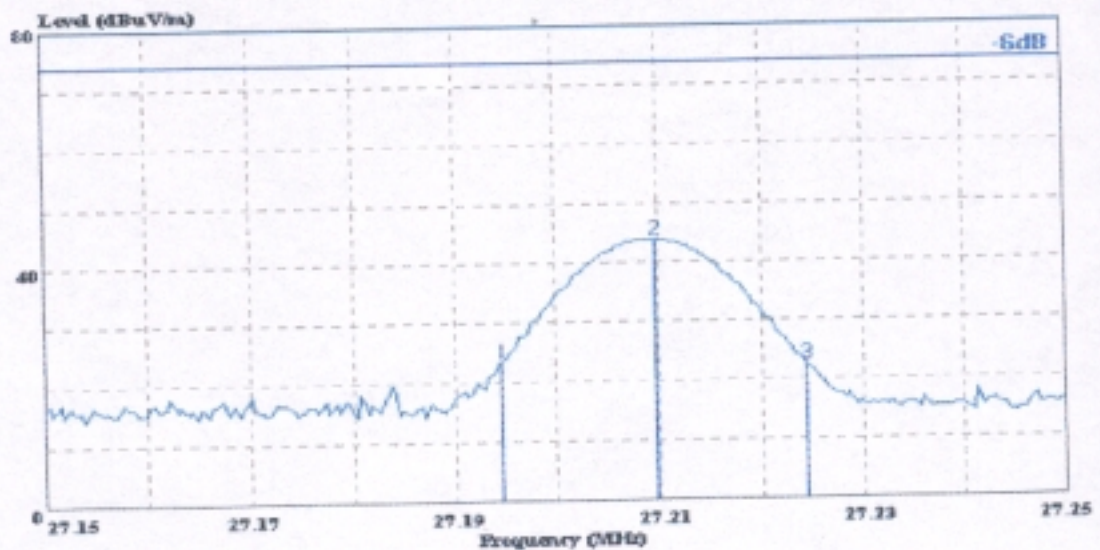




# 峰鑫科技有限公司 PEP Testing Laboratory

Data#: 332 File#: CE.eml

Date: 2001-08-24 Time: 09:40:21



Trace: 331

Site : Chamber No.1  
Condition: 27MHz基頻 3m 3142BV(26-2000MHZ) HORIZONTAL  
Eut : CM108  
Power : DC 3V  
Memo : CH2:27.205MHz

Page: 1

|   | Freq   | Level  | Over   | Limit  | Read  | Probe  | Cable | Preamp |
|---|--------|--------|--------|--------|-------|--------|-------|--------|
|   | MHz    | dBuV/m | Limit  | Line   | Level | Factor | Loss  | Factor |
|   | MHz    | dBuV/m | dB     | dBuV/m | dBuV  | dB     | dB    | dB     |
| 1 | 27.195 | 23.64  | -56.36 | 80.00  | 23.64 | 0.00   | 0.00  | 0.00   |
| 2 | 27.210 | 43.99  | -36.01 | 80.00  | 43.99 | 0.00   | 0.00  | 0.00   |
| 3 | 27.225 | 22.74  | -57.26 | 80.00  | 22.74 | 0.00   | 0.00  | 0.00   |

## 14. List of Measured Instruments

| Test Mode                      | Instrument                       | Model No.                | Serial No.             | Next Cal. Date                    | Cal. Interval | Measurement Uncertainty |
|--------------------------------|----------------------------------|--------------------------|------------------------|-----------------------------------|---------------|-------------------------|
| <b>Conduction<br/>(No.1)</b>   | R & S Receiver                   | ESHS10                   | 830223/008             | Nov. 14, 2001                     | 1 Year        |                         |
|                                | Rolf Heine LISN                  | NNB-4/63TL               | 98008                  | No need<br>(2 <sup>nd</sup> LISN) | 1 Year        |                         |
|                                | R & S LISN                       | ESH3-Z5                  | 844982/039             | Jul. 25, 2002                     | 1 Year        |                         |
|                                | Spectrum Analyzer                | R3261A                   | 91720076               | May 03, 2002                      | 1 Year        |                         |
|                                | RF Cable                         | Rg400                    | N/A                    | Jul. 08, 2002                     | 1 Year        |                         |
|                                | Schaffner ISN                    | T411                     | N/A                    | Jul. 01, 2002                     | 1 Year        |                         |
| <b>Radiation<br/>(OP No.1)</b> | R & S Receiver                   | ESVS30                   | 863342/012             | May 07, 2002                      | 1 Year        |                         |
|                                | Anritsu Pre-Amp.                 | MH648A                   | M15080                 | Apr. 10, 2002                     | 1 Year        |                         |
|                                | R & S Pre-Amp.                   | ESMI-Z7                  | 612278/011             | Aug. 02, 2002                     | 1 Year        |                         |
|                                | Schaffner Antenna                | CBL6112B<br>(30MHz-2GHz) | 2655                   | Jul. 27, 2002                     | 1 Year        |                         |
|                                | COM-Power Horn Ant.              | AH-118<br>(1GHz-18GHz)   | 10095                  | July 25, 2002                     | 1 Year        |                         |
|                                | EMCO RF Cable                    | 175series                | NO. 1                  | Apr. 10, 2002                     | 1 Year        |                         |
|                                | Schwarzbeck Precision Dipole Ant | VHAP<br>(30MHz-4GHz)     | 970 + 971<br>953 + 954 | Jun. 27, 2003                     | 3 Year        |                         |
|                                | R & S Signal Generator           | SMY01                    | 841104/037             | Aug. 26, 2002                     | 1 Year        |                         |
|                                | RF Cable                         | No. 1                    | N/A                    | Jul. 26, 2002                     | 1 Year        |                         |
|                                | EMCO Antenna                     | 3142B<br>(26MHz-2GHz)    | 9904-1307              | July 01, 2002                     | 1 Year        |                         |

## 15. Duties of The Responsible Party

*The responsible party upon signing or accepting the Declaration of Conformity as specified in Section 2.906 of the FCC Rules hereby agrees to the duties listed below.*

### § 2.1073(a).

The responsible party warrants that each unit of equipment marketed under DoC is identical to the unit tested and found acceptable with the standards and that the records maintained by the responsible party continue to reflect the equipment being produced is within the variation that can be expected due to quantity production and testing on a statistical basis.

### § 2.1073(b).

The responsible party must have a written statement from the manufacturer or accredited test laboratory that the equipment complies with the appropriate technical standards.

### § 2.1073(c).

In case of transfer of control of equipment, as in the case of sale or merger, the new responsible party shall bear the responsibility of continued compliance of the equipment.

### § 2.1073(d).

Equipment shall be retested if any modifications or changes are made that could adversely affect the emanation characteristics of the equipment.

### § 2.1073(e).

If any modifications or changes made by anyone other than the responsible party, the party making the modifications or changes, if located within the U.S., becomes the new responsible party. The new responsible party must comply with all provisions for the DoC, including having test data on file demonstrating that the product continues to comply with all of the applicable technical standards.

### § 2.1075(a)(1).

The responsible party shall maintain records of the original design drawings and specifications and all changes made to the product that may affect compliance.

### § 2.1075(a)(2).

The responsible party shall maintain records of the procedures used for production inspection and testing to insure the conformance with the FCC Rules.

### § 2.946(a)(1).

The test report data shall be provided to the FCC within 14 days of delivery of request. The test sample(s) shall be provided within 60 days of delivery of request.

### § 2.946(b)

In case involving harmful interference or safety of life or property, the production sample must be provided within 60 days, but not less than 14 days. Failure to comply with such a request with the time frame shown may be cause for forfeiture, pursuant to Section 1.80 of Part 1 of the FCC Rules.

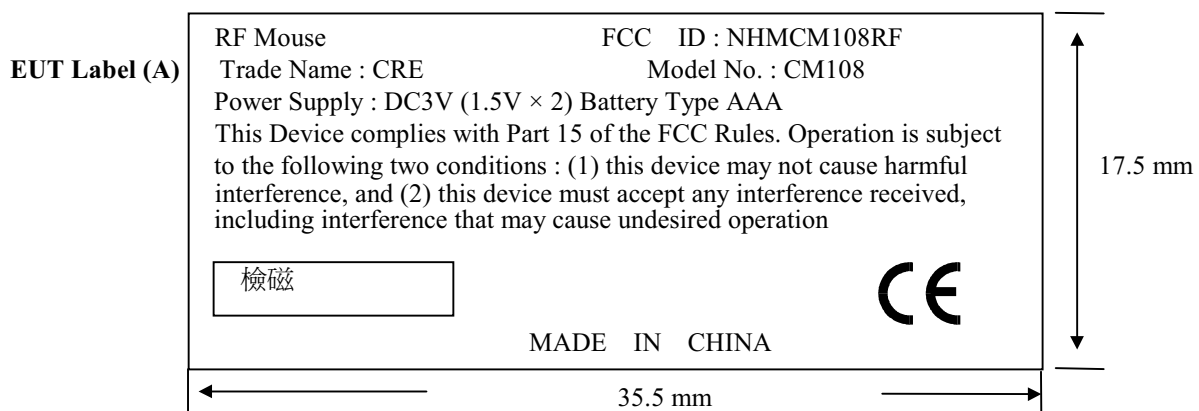
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*\*The Responsible Party is the manufacturer, system integrator, or the importer as defined in Section 2.909 of the FCC Rules. The Rules. The Responsible Party for a DoC must be located within the United States as specified in Section 2.1077.*

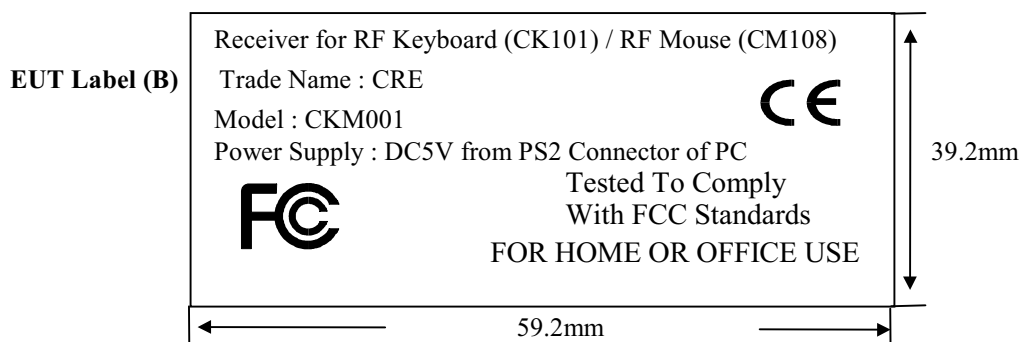


## 16. FCC ID Label Sample

The sample label shown below shall be permanently affixed at a conspicuous location on the device, instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practicable, only the trade name, model number, and the FCC logo must be displayed on the device per Section § 15.19 (b)(2).



FCC ID Label Format for EUT TX Model CM108



DoC ID Label Format for EUT RX Model CKM001

## 17. Information To The User

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

### Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

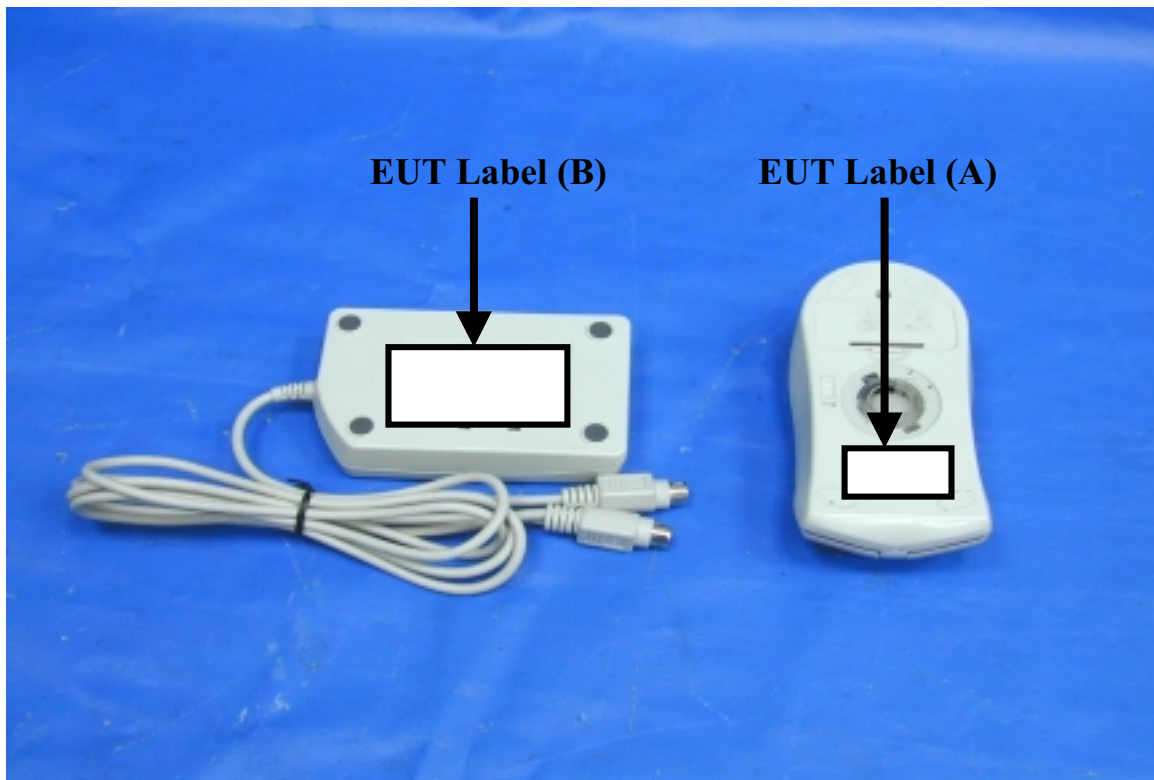
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver .
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected .
- Consult the dealer or an experienced radio / TV technician for help .

## 18. EUT External Photos

PHOTO. 1. EUT (TX + RX) TOP VIEW



PHOTO. 2. EUT (TX + RX) BOTTOM VIEW



## 18. EUT Internal Photos

PHOTO. 3. EUT (TX Model CM108) INSIDE VIEW

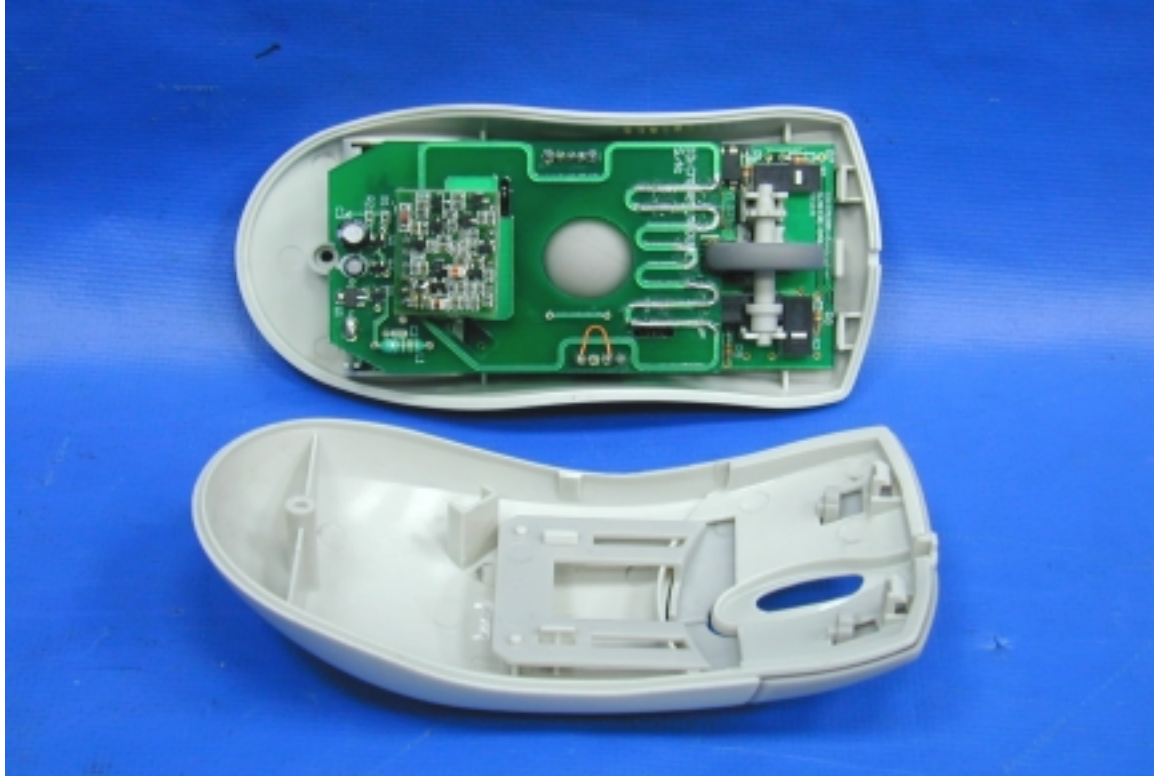
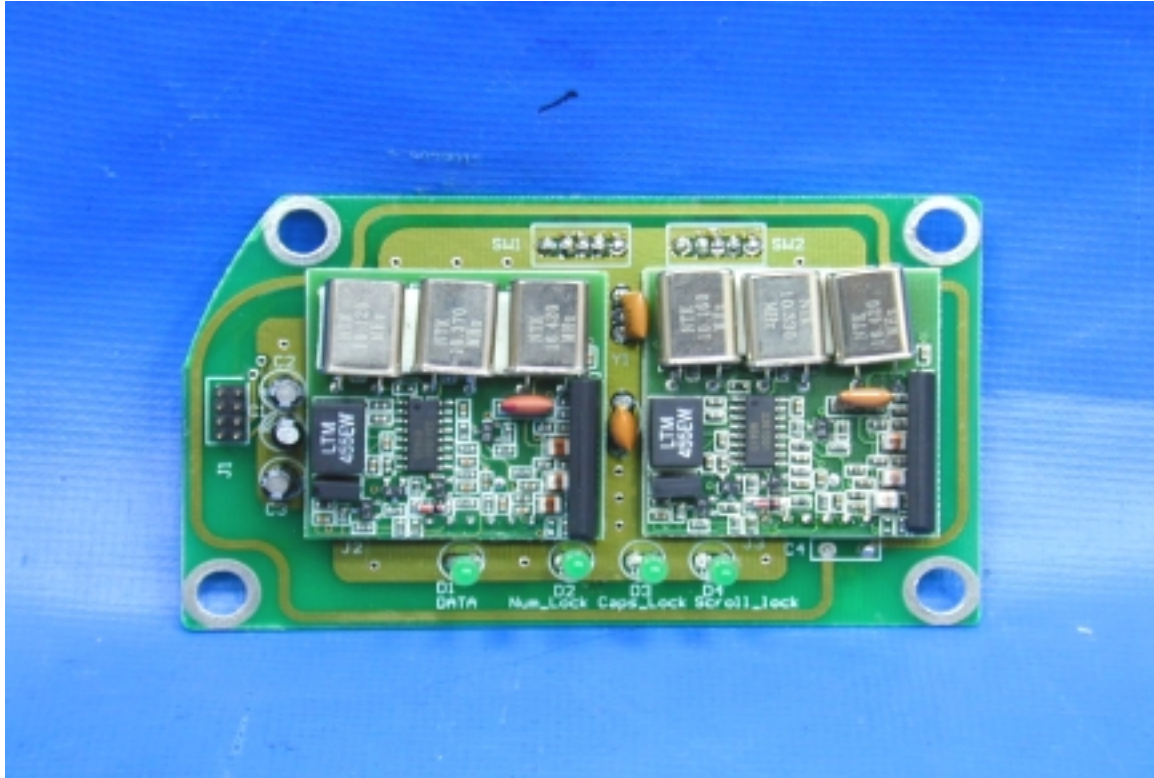


PHOTO. 4. EUT (RX Model CKM001) SOLDERING SIDE VIEW



PHOTO. 5. EUT (RX Model CKM001) COMPONENT SIDE VIEW





## VERIFICATION OF CONFORMITY FOR FCC ID

**Applicant Name :** CRE TECHNOLOGY CO., LTD.

**Address :** 7F, NO. 22, WU-CHUAN 7<sup>TH</sup> ROAD, WU-KU  
INDUSTRIAL PARK, TAIPEI, TAIWAN, R. O. C.

**Contact Person :** AARON PENG / ELECTRONIC ENGINEER

**EUT Type :** RF Mouse

**TX Model No.:** CM108  
**TX FCC ID:** NHMCM108RF

**RX Model No.:** CKM001  
**RX FCC ID:** N/A

**Regulation:** FCC Parts 2 and 15; Docket 95-19

**Limitation:** Comply with Section 15.227, Class B

**Date of issued:** Aug. 23, 2001

**Report No.:** E900542

The device bearing the trade name and model specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-1992. (See Test Report if any modifications were made for compliance.)

PEP declare that no party to this application has been denied the NVLAP benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).

*Peter Kao*

Peter Kao/NVLAP Signatory



NVLAP LAB CODE:200097-0

# DECLARATION OF CONFORMITY

## **EUT Receiver Model: CKM001**

To be used for TX Model: 1) CM108, RF Mouse  
2) CK101, RF Keyboard

Responsible Party: CRE TECHNOLOGY CO., LTD.

Address: 7F, NO. 22, WU-CHUAN 7<sup>TH</sup> ROAD, WU-KU  
INDUSTRIAL PARK, TAIPEI, TAIWAN, R. O. C.

Contact Person: AARON PENG / ELECTRONIC ENGINEER

Tel. No.: 886-2-22902138 Fax No.: 886-2-22990233

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired

We hereby declare that the equipment bearing the trade name and model number specified above was tested conforming to the applicable FCC Rules under the most accurate measurement standards possible, and that all the necessary steps have been taken and are in force to assure that production units of the same equipment will continue to comply with the Commission's requirements.



\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date