

# **FCC TEST REPORT**

for

**47 CFR, Part 2, Part 15 and CISPR PUB. 22 Class B**

Equipment : VGA CARD

Model No. : A4-M64/VANTATV-E1

FCC ID : XXXM64-VANTA

Filing Type : Original Grant

Applicant : **SUNDAX ENTERPRISES LTD.**  
CENTRE, No. 18 KA YIP STREET,  
CHAI WAN, HONG KONG.

- The test result refers exclusively to the test presented test model / sample.
- Without the written authorization of the test lab., the Test Report may not be copied.
- **Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.**

***SPORTON International Inc.***

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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# **CERTIFICATE OF COMPLIANCE**

**for**

**47 CFR, Part 2, Part 15 and CISPR PUB. 22 Class B**

Equipment : VGA CARD

Model No. : A4-M64/VANTATV-E1

FCC ID : XXXM64-VANTA

Applicant : **SUNDAX ENTERPRISES LTD.**  
CENTRE, No. 18 KA YIP STREET,  
CHAI WAN, HONG KONG.

## **I HEREBY CERTIFY THAT :**

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 1992** and the energy emitted by this equipment was **passed CISPR PUB. 22** both radiated and conducted emission class B limits. Testing was carried out on Jul. 19, 2000 at **SPORTON International Inc.** LAB. in Nei Hwu.

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Lenore Chang  
President

***SPORTON International Inc.***

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

## **1. General Description of Equipment under Test**

### **1.1. Applicant**

**SUNDAX ENTERPRISES LTD.**  
CENTRE, No. 18 KA YIP STREET,  
CHAI WAN, HONG KONG.

### **1.2. Manufacturer**

Same as 1.1.

### **1.3. Basic Description of Equipment under Test**

|                   |                      |
|-------------------|----------------------|
| Equipment         | : VGA CARD           |
| Model No.         | : A4-M64/VANTATV-E1  |
| FCC ID.           | : XXXM64-VANTA       |
| Trade Name        | : SUNDAX             |
| AV Cable          | : Non-Shielded, 1.1m |
| S Cable           | : Non-Shielded, 1.1m |
| Power Supply Type | : From PC            |
| Power Cord        | : N/A                |

## 1.4. Feature of Equipment under Test

### **TNT 2 m64 Key features:**

- Powerful nVidia RIVA TNT2 m64 graphics chip, integrated 2D, 3D and video accelerator.
- 32MB fastest high-speed SDRAM memory and 300MHz RAMDAC.
- Twin-Textel processor with true single-pass multi-texturing for exquisite 3D rendering.

- Available for AGP 4X/2X/1X bus interface.

### **VISUALLY STUNNING INTERACTIVE 3D:**

- Optimized Direct 3D and OpenGL acceleration.
- 32-bit Z/stencil Buffer.
- Anti-aliasing: full scene, order independent.
- Anisotropic filtering.
- Texture Blend Support.
- Per-pixel perspective correct texture mapping.

### **High-Performance 128-bit 2D acceleration:**

- Optimized for multiple color depths including 32, 24, 16, 15, and 8-bits per pixel.
- True-color hardware cursor.
- Hardware color dithering.
- Multi-buffering (Up to quad buffering) for smooth animation and video playback.
- Fast 32-bit VGA/SVGA support.

### **VIDEO SUPPORT:**

- Full-screen, full-frame DVD playback.
- Video acceleration for DirectShow, MPEG-1, MPEG-2 and Indeo.

### **Flat Panel Desktop Monitor Support:**

- 24-bit digital interface for flat panel encoders (TMDS Transmitter).
- Auto-expansion and centering for VGA text and graphics modes.
- Support for all resolution up to SXGA at 1280x1024@60Hz.

## **2. Test Configuration of Equipment under Test**

### **2.1. Test Manner**

- a. The EUT has been associated with personal computer and peripherals pursuant to ANSI C63.4-1992 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The HITACHI Monitor, DELL PS/2 Keyboard, PRIMAX PS/2 Mouse, HP Printer, ACEEX Modem, SONY TV and EUT were connected to the FIC PC for EMI test.
- c. The Following display resolution were investigated during the compliance test:
  1. Horizontal frequency (640x480 to 1,600x1,200, 31.5 KHz to 109 KHz), CRT only
  2. Vertical frequency (60 Hz to 100 Hz), CRT only
  3. 800x600, TV OUT
- d. According to the above tests, we listed the following display modes as the worst cases:
  1. 1,600x1,200 (non-interlanced 106 KHz), refresh rate 85 Hz.
  2. 1,280x1,024 (non-interlanced 109 KHz), refresh rate 100 Hz.
  3. 800x600 TV OUT
- e. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 2,000 MHz.

### **2.2. Description of Test System**

#### Support Unit 1. -- Monitor (HITACHI)

|                   |                  |
|-------------------|------------------|
| FCC ID            | : M9U9705C97BMD  |
| Model No.         | : CM803ET        |
| Power Supply Type | : Switching      |
| Power Cord        | : Non-Shielded   |
| Serial No.        | : SP0181         |
| Data Cable        | : Shielded, 2.0m |

#### Support Unit 2. -- PS/2 Keyboard (DELL)

|                   |                  |
|-------------------|------------------|
| FCC ID            | : GYUM90SK       |
| Model No.         | : AT101W         |
| Power Supply Type | : From PC        |
| Power Cord        | : Shielded       |
| Serial No.        | : SP00188        |
| Data Cable        | : Shielded, 1.5m |

## Support Unit 3. -- PS/2 Mouse (PRIMAX)

FCC ID : EMJMUJQ  
Model No. : MUS9J  
Serial No. : SP0045  
Data Cable : Non-Shielded, 1.75m

## Support Unit 4. -- Printer (HP)

FCC ID : DSI6XU2225  
Model No. : 2225C  
Power Supply Type : Linear  
Power Cord : Non-Shielded  
Serial No. : SP0014  
Data Cable : Shielded, 1.2m

## Support Unit 5. -- Modem (ACEEX)

FCC ID : IFAXDM1414  
Model No. : DM1414  
Power Supply Type : Linear  
Power Cord : Non-Shielded  
Serial No. : SP0015  
Data Cable : Shielded, 1.15m

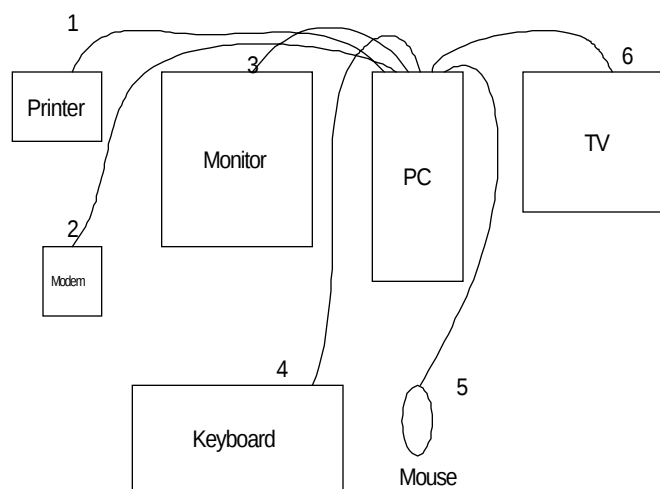
## Support Unit 6. -- TV (SONY)

Model No. : PVM-14N2E  
Power Supply Type : Switching  
Serial No. : SP0097  
AV Cable : Non-Shielded, 1.1m  
S Cable : Non-Shielded, 1.1m

## Support Unit 7. -- Personal Computer (FIC)

FCC ID : N/A  
Model No. : P2L97  
Power Supply Type : Switching  
Power Cord : Non-Shielded  
Serial No. : SP0037  
Data Cable : Shielded  
Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

### 2.3. Connection Diagram of Test System



1. The I/O cable is connected from PC to the support unit 4.
2. The I/O cable is connected from PC to the support unit 5.
3. The I/O cable is connected from EUT to the support unit 1.
4. The I/O cable is connected from PC to the support unit 2.
5. The I/O cable is connected from PC to the support unit 3.
6. The I/O cable is connected from EUT to the support unit 6.

### **3. Test Software**

Two executive programs, EMITEST.EXE & WINFCC.EXE under WIN 98, which generate a complete line of continuously repeating “ H “ pattern were used as the test software.

The programs were executed as follows :

- a. Turn on the power of all equipment.
- b. The PC reads the test program from the floppy disk drive and runs it.
- c. The PC sends “ H “ messages to the monitor, and the monitor displays “ H “ patterns on the screen.
- d. The PC sends “ H “ messages to the printer, then the printer prints them on the paper.
- e. The PC sends “ H “ messages to the modem.
- f. The PC sends “ H ” messages to the internal Hard Disk, and the Hard Disk reads and writes the message.
- g. Repeat the steps from b to f.

## **4. General Information of Test**

### **4.1. Test Facility**

This test was carried out by SPORTON International Inc.

Test Site Location : No. 3, Lane 238, Kang Lo Street, Nei Hwu District,  
Taipei 11424, Taiwan, R.O.C.

TEL : 886-2-2631-4739

FAX : 886-2-2631-9740

### **4.2. Standard for Methods of Measurement**

ANSI C63.4-1992

### **4.3. Test in Compliance with**

CISPR PUB. 22 Class B

### **4.4. Frequency Range Investigated**

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation : from 30 MHz to 2,000 MHz

### **4.5. Test Distance**

The test distance of radiated emission from antenna to EUT is 10 M.

## **5. Test of Conducted Powerline**

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 115 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-1992 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

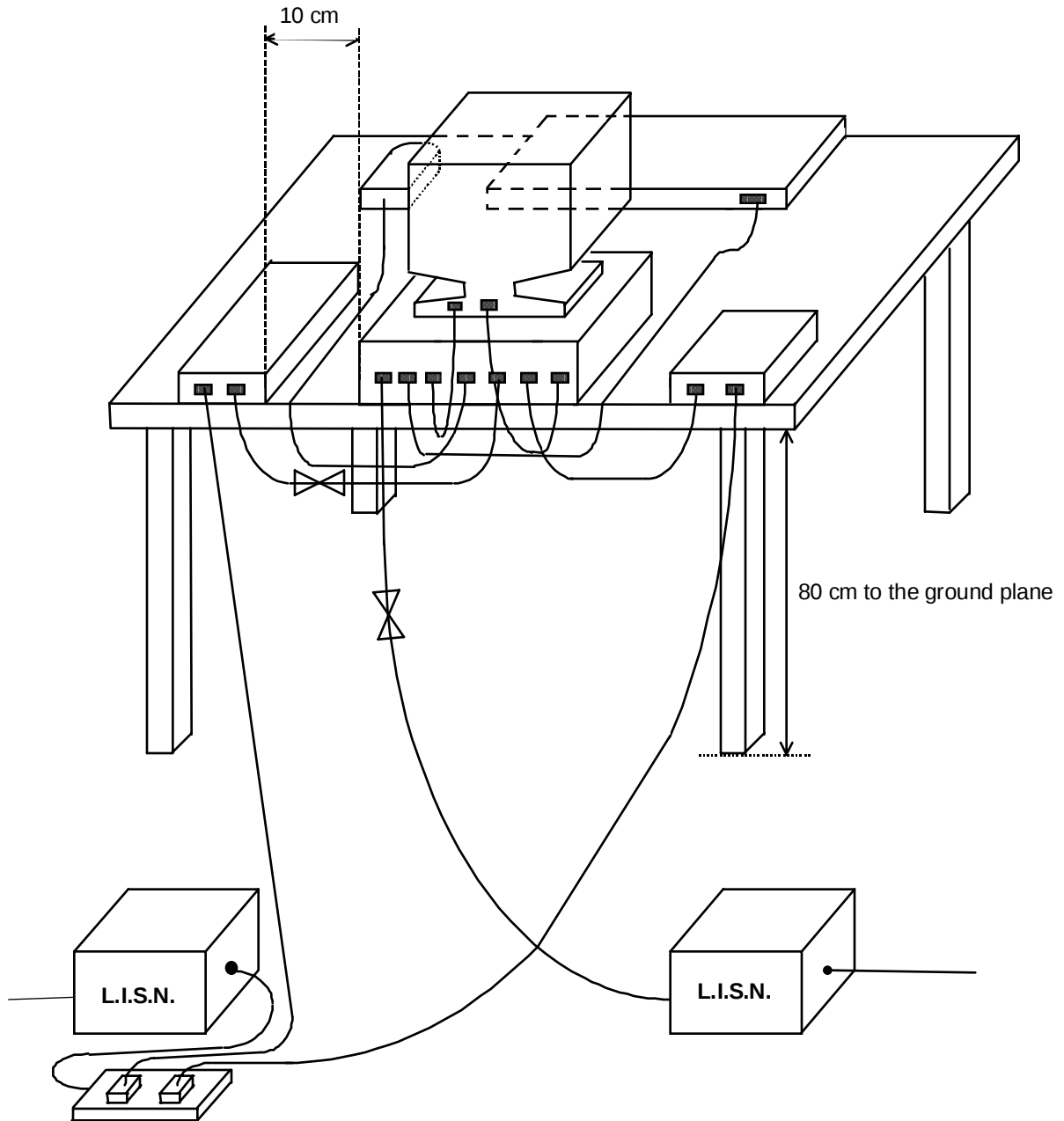
### **5.1. Major Measuring Instruments**

|                 |           |
|-----------------|-----------|
| Test Receiver   | HP 8591EM |
| Attenuation     | 0 dB      |
| Start Frequency | 0.15 MHz  |
| Stop Frequency  | 30 MHz    |
| Step MHz        | 0.007 MHz |
| IF Bandwidth    | 9 kHz     |

**5.2. Test Procedures**

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- i. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be retested one by one using the quasi-peak method and reported.

### 5.3. Typical Test Setup Layout of Conducted Powerline



## 5.4. Test Result of AC Powerline Conducted Emission

5.4.1. Test mode : 1600\*1200/106K/85Hz (CRT Only)

- Temperature : 29°C
- Relative Humidity : 50 %
- Test Date : Jul. 19, 2000

The Conducted Emission test was passed at minimum margin

### LINE 3.820 MHz / 34.10 dBuV.

| Freq.<br>(MHz) | Line<br>or<br>Neutral | Meter Reading  |                |              |              | Limits         |                |              |              | Margin       |              |
|----------------|-----------------------|----------------|----------------|--------------|--------------|----------------|----------------|--------------|--------------|--------------|--------------|
|                |                       | Q.P.<br>(dBuV) | A.V.<br>(dBuV) | Q.P.<br>(uV) | A.V.<br>(uV) | Q.P.<br>(dBuV) | A.V.<br>(dBuV) | Q.P.<br>(uV) | A.V.<br>(uV) | Q.P.<br>(dB) | A.V.<br>(dB) |
| 0.278          | L                     | 36.60          | 36.10          | 67.61        | 63.83        | 60.88          | 50.88          | 1106.14      | 349.79       | -24.3        | -14.8        |
| 0.347          | L                     | 33.40          | 32.80          | 46.77        | 43.65        | 59.03          | 49.03          | 893.89       | 282.67       | -25.6        | -16.2        |
| 3.820          | L                     | 36.10          | 34.10          | 63.83        | 50.70        | 56.00          | 46.00          | 630.96       | 199.53       | -19.9        | -11.9        |
| 16.736         | L                     | 42.30          | 35.80          | 130.32       | 61.66        | 60.00          | 50.00          | 1000.00      | 316.23       | -17.7        | -14.2        |
| 0.279          | N                     | 37.70          | 37.20          | 76.74        | 72.44        | 60.85          | 50.85          | 1103.04      | 348.81       | -23.2        | -13.7        |
| 3.819          | N                     | 36.60          | 32.80          | 67.61        | 43.65        | 56.00          | 46.00          | 630.96       | 199.53       | -19.4        | -13.2        |



Test Engineer : \_\_\_\_\_

BENSON TSAI

**5.4.2. Test mode : 1280\*1024/109K/100Hz (CRT Only)**

- Temperature : 29°C
- Relative Humidity : 50 %
- Test Date : Jul. 19, 2000

**The Conducted Emission test was passed at minimum margin**

**NEUTRAL 3.819 MHz / 34.20 dBuV.**

| Freq.<br>(MHz) | Line<br>or<br>Neutral | Meter Reading  |                |              |              | Limits         |                |              |              | Margin       |              |
|----------------|-----------------------|----------------|----------------|--------------|--------------|----------------|----------------|--------------|--------------|--------------|--------------|
|                |                       | Q.P.<br>(dBuV) | A.V.<br>(dBuV) | Q.P.<br>(uV) | A.V.<br>(uV) | Q.P.<br>(dBuV) | A.V.<br>(dBuV) | Q.P.<br>(uV) | A.V.<br>(uV) | Q.P.<br>(dB) | A.V.<br>(dB) |
| 0.278          | L                     | 36.00          | 35.50          | 63.10        | 59.57        | 60.88          | 50.88          | 1106.85      | 350.02       | -24.9        | -15.4        |
| 0.347          | L                     | 33.40          | 32.80          | 46.77        | 43.65        | 59.04          | 49.04          | 895.32       | 283.12       | -25.6        | -16.2        |
| 3.820          | L                     | 37.90          | 33.80          | 78.52        | 48.98        | 56.00          | 46.00          | 630.96       | 199.53       | -18.1        | -12.2        |
| 0.278          | N                     | 37.40          | 36.90          | 74.13        | 69.98        | 60.88          | 50.88          | 1106.16      | 349.80       | -23.5        | -14.0        |
| 0.347          | N                     | 32.30          | 31.60          | 41.21        | 38.02        | 59.03          | 49.03          | 894.43       | 282.84       | -26.7        | -17.4        |
| 3.819          | N                     | 38.70          | 34.20          | 86.10        | 51.29        | 56.00          | 46.00          | 630.96       | 199.53       | -17.3        | -11.8        |

Test Engineer : 

BENSON TSAI

**5.4.3. Test mode : 800\*600 (TV OUT)**

- Temperature : 29°C
- Relative Humidity : 50 %
- Test Date : Jul. 19, 2000

**The Conducted Emission test was passed at minimum margin**

**NEUTRAL 4.243 MHz / 32.70 dBuV.**

| Freq.<br>(MHz) | Line<br>or<br>Neutral | Meter Reading  |                |              |              | Limits         |                |              |              | Margin       |              |
|----------------|-----------------------|----------------|----------------|--------------|--------------|----------------|----------------|--------------|--------------|--------------|--------------|
|                |                       | Q.P.<br>(dBuV) | A.V.<br>(dBuV) | Q.P.<br>(uV) | A.V.<br>(uV) | Q.P.<br>(dBuV) | A.V.<br>(dBuV) | Q.P.<br>(uV) | A.V.<br>(uV) | Q.P.<br>(dB) | A.V.<br>(dB) |
| 0.278          | L                     | 36.40          | 35.90          | 66.07        | 62.37        | 60.87          | 50.87          | 1105.08      | 349.46       | -24.5        | -15.0        |
| 0.347          | L                     | 33.10          | 32.60          | 45.19        | 42.66        | 59.02          | 49.02          | 893.81       | 282.65       | -25.9        | -16.4        |
| 4.242          | L                     | 35.90          | 32.30          | 62.37        | 41.21        | 56.00          | 46.00          | 630.96       | 199.53       | -20.1        | -13.7        |
| 16.744         | L                     | 41.40          | 35.80          | 117.49       | 61.66        | 60.00          | 50.00          | 1000.00      | 316.23       | -18.6        | -14.2        |
| 0.277          | N                     | 37.40          | 37.00          | 74.13        | 70.79        | 60.89          | 50.89          | 1108.06      | 350.40       | -23.5        | -13.9        |
| 4.243          | N                     | 36.30          | 32.70          | 65.31        | 43.15        | 56.00          | 46.00          | 630.96       | 199.53       | -19.7        | -13.3        |

Test Engineer : 

BENSON TSAI

### **5.5. Photographs of Conducted Powerline Test Configuration**

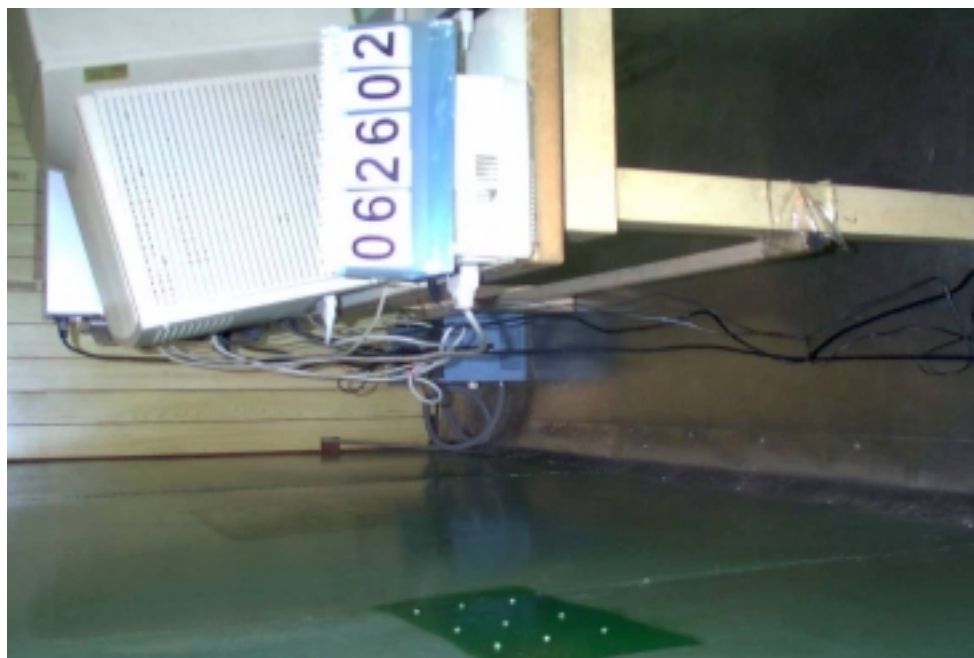
- The photographs show the configuration that generates the maximum emission.

CRT ONLY

FRONT VIEW



REAR VIEW



SIDE VIEW



TV OUT

FRONT VIEW



REAR VIEW



SIDE VIEW



## **6. Test of Radiated Emission**

Radiated emissions from 30 MHz to 2,000 MHz were measured with a bandwidth of 120 kHz according to the methods defines in ANSI C63.4-1992. The EUT was placed on a nonmetallic stand in the open-field site, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

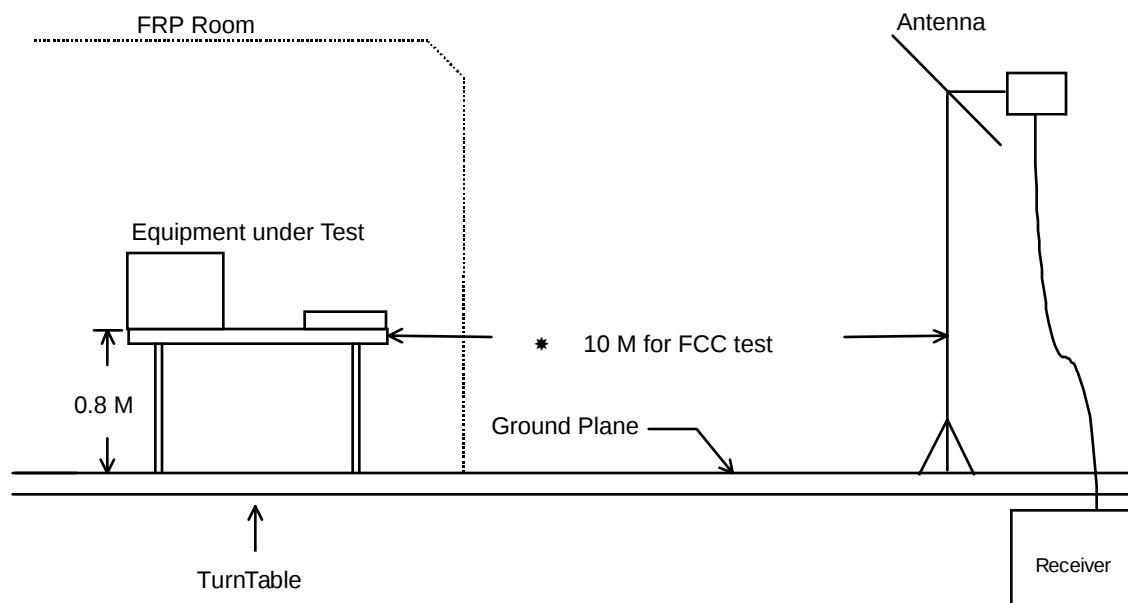
### **6.1. Major Measuring Instruments**

- Amplifier ( HP 87405A )
  - Attenuation 0 dB
  - RF Gain 20 dB
  - Signal Input 10 MHz to 3 GHz
  
- Spectrum Analyzer ( ADVANTEST R3261C )
  - Attenuation 0 dB
  - Start Frequency 30 MHz
  - Stop Frequency 2000 MHz
  - Resolution Bandwidth 1 MHz
  - Video Bandwidth 1 MHz
  - Signal Input 9 KHz to 2.6 GHz

## **6.2. Test Procedures**

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be repeated one by one using the quasi-peak method and reported.

### 6.3. Typical Test Setup Layout of Radiated Emission



## 6.4. Test Result of Radiated Emission

### 6.4.1. Test mode : 1600\*1200/106K/85Hz (CRT Only)

- Test Distance : 10 M
- Temperature : 27°C
- Relative Humidity : 48 %
- Test Date : Jul. 14, 2000
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Antenna Factor + Cable Loss + Reading = Emission

The Radiated Emission test was passed at minimum margin

68.752 MHz / 24.35 dBuV (VERTICAL) Antenna Height 1 Meter, Turntable Degree 300 °.

| Frequency<br>(MHz) | Polarity | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Limits   |        | Emission<br>(dBuV/m) | Level<br>(uV/m) | Margin<br>(dB) |
|--------------------|----------|-----------------------------|-----------------------|-------------------|----------|--------|----------------------|-----------------|----------------|
|                    |          |                             |                       |                   | (dBuV/m) | (uV/m) |                      |                 |                |
| 185.700            | H        | 9.43                        | 2.43                  | 9.84              | 30.00    | 31.62  | 21.70                | 12.16           | -8.30          |
| 68.752             | V        | 6.75                        | 1.36                  | 16.24             | 30.00    | 31.62  | 24.35                | 16.50           | -5.65          |
| 175.320            | V        | 9.35                        | 2.33                  | 11.80             | 30.00    | 31.62  | 23.48                | 14.93           | -6.52          |
| 183.278            | V        | 9.45                        | 2.39                  | 12.43             | 30.00    | 31.62  | 24.27                | 16.35           | -5.73          |
| 214.666            | V        | 10.10                       | 2.64                  | 8.36              | 30.00    | 31.62  | 21.10                | 11.35           | -8.90          |
| 247.589            | V        | 11.86                       | 3.01                  | 11.89             | 37.00    | 70.79  | 26.76                | 21.78           | -10.24         |

  
Test Engineer : \_\_\_\_\_  
BENSON TSAI

## 6.4.2. Test mode : 1280\*1024/109K/100Hz (CRT Only)

- Test Distance : 10 M
- Temperature : 27°C
- Relative Humidity : 48 %
- Test Date : Jul. 14, 2000
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Antenna Factor + Cable Loss + Reading = Emission

The Radiated Emission test was passed at minimum margin

56.469 MHz / 25.27 dBuV (HORIZONTAL) Antenna Height 4 Meter, Turntable Degree 360 °.

| Frequency<br>(MHz) | Polarity | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Limits   |        | Emission<br>(dBuV/m) | Level<br>(uV/m) | Margin<br>(dB) |
|--------------------|----------|-----------------------------|-----------------------|-------------------|----------|--------|----------------------|-----------------|----------------|
|                    |          |                             |                       |                   | (dBuV/m) | (uV/m) |                      |                 |                |
| 56.469             | H        | 7.53                        | 1.13                  | 16.61             | 30.00    | 31.62  | 25.27                | 18.34           | -4.73          |
| 67.887             | H        | 6.67                        | 1.36                  | 12.13             | 30.00    | 31.62  | 20.16                | 10.19           | -9.84          |
| 113.213            | H        | 11.50                       | 1.82                  | 5.95              | 30.00    | 31.62  | 19.27                | 9.19            | -10.73         |
| 175.320            | H        | 9.35                        | 2.33                  | 11.60             | 30.00    | 31.62  | 23.28                | 14.59           | -6.72          |
| 441.915            | H        | 16.47                       | 4.34                  | 6.53              | 37.00    | 70.79  | 27.34                | 23.28           | -9.66          |
| 56.988             | V        | 7.14                        | 1.17                  | 13.21             | 30.00    | 31.62  | 21.52                | 11.91           | -8.48          |

  
Test Engineer : \_\_\_\_\_  
BENSON TSAI

## 6.4.3. Test mode : 800\*600 (TV OUT)

- Test Distance : 10 M
- Temperature : 27°C
- Relative Humidity : 48 %
- Test Date : Jul. 14, 2000
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Antenna Factor + Cable Loss + Reading = Emission

**The Radiated Emission test was passed at minimum margin**

**173.590 MHz / 26.67 dBuV (HORIZONTAL) Antenna Height 4 Meter, Turntable Degree 360 °.**

| Frequency<br>(MHz) | Polarity | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Limits   |        | Emission<br>(dBuV/m) | Level<br>(uV/m) | Margin<br>(dB) |
|--------------------|----------|-----------------------------|-----------------------|-------------------|----------|--------|----------------------|-----------------|----------------|
|                    |          |                             |                       |                   | (dBuV/m) | (uV/m) |                      |                 |                |
| 140.893            | H        | 10.79                       | 2.10                  | 12.26             | 30.00    | 31.62  | 25.15                | 18.09           | -4.85          |
| 157.501            | H        | 10.04                       | 2.21                  | 11.53             | 30.00    | 31.62  | 23.78                | 15.45           | -6.22          |
| 173.590            | H        | 9.36                        | 2.32                  | 14.99             | 30.00    | 31.62  | 26.67                | 21.55           | -3.33          |
| 55.905             | V        | 7.53                        | 1.13                  | 14.96             | 30.00    | 31.62  | 23.62                | 15.17           | -6.38          |
| 68.060             | V        | 6.67                        | 1.36                  | 16.64             | 30.00    | 31.62  | 24.67                | 17.12           | -5.33          |
| 140.720            | V        | 10.79                       | 2.10                  | 12.26             | 30.00    | 31.62  | 25.15                | 18.09           | -4.85          |

Test Engineer : 

BENSON TSAI

BENSON TSAI

**6.5. Photographs of Radiated Emission Test Configuration**

- The photographs show the configuration that generates the maximum emission.

CRT ONLY

FRONT VIEW



REAR VIEW



TV OUT

FRONT VIEW



REAR VIEW



## 7. Antenna Factor & Cable Loss

| Frequency (MHz) | Antenna Factor (dB) | Cable Loss (dB) |
|-----------------|---------------------|-----------------|
| 30              | 19.2                | 0.8             |
| 35              | 13.4                | 0.9             |
| 40              | 13.4                | 1.0             |
| 45              | 11.5                | 1.0             |
| 50              | 9.9                 | 1.1             |
| 55              | 7.9                 | 1.1             |
| 60              | 6.0                 | 1.3             |
| 65              | 6.4                 | 1.4             |
| 70              | 6.8                 | 1.3             |
| 75              | 7.1                 | 1.4             |
| 80              | 7.3                 | 1.4             |
| 85              | 8.2                 | 1.4             |
| 90              | 9.2                 | 1.6             |
| 95              | 10.1                | 1.6             |
| 100             | 11.0                | 1.7             |
| 110             | 11.4                | 1.8             |
| 120             | 11.8                | 1.8             |
| 130             | 11.3                | 2.0             |
| 140             | 10.8                | 2.1             |
| 150             | 10.7                | 2.2             |
| 160             | 9.7                 | 2.2             |
| 170             | 9.4                 | 2.3             |
| 180             | 9.5                 | 2.3             |
| 190             | 9.4                 | 2.5             |
| 200             | 9.3                 | 2.5             |
| 220             | 10.4                | 2.7             |
| 240             | 11.4                | 3.0             |
| 260             | 12.2                | 3.0             |
| 280             | 12.5                | 3.3             |
| 300             | 12.9                | 3.4             |
| 320             | 13.3                | 3.4             |
| 340             | 13.7                | 3.6             |
| 360             | 14.5                | 3.8             |
| 380             | 15.5                | 4.0             |
| 400             | 16.5                | 4.0             |
| 450             | 16.5                | 4.4             |
| 500             | 18.3                | 4.5             |
| 550             | 18.9                | 4.8             |
| 600             | 20.1                | 5.0             |
| 650             | 18.1                | 5.2             |
| 700             | 17.2                | 5.5             |
| 750             | 17.9                | 5.8             |
| 800             | 18.0                | 6.1             |
| 850             | 17.7                | 6.7             |
| 900             | 21.0                | 6.8             |
| 950             | 21.0                | 6.9             |
| 1000            | 20.3                | 7.1             |

NHOP3

## 8. List of Measuring Equipment Used

| Instrument                           | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark     |
|--------------------------------------|--------------|-----------|------------|-----------------|------------------|------------|
| Spectrum                             | HP           | 8591EM    | 3536A00673 | 50uH / 50 OHM   | Sep. 02, 1999    | Conduction |
| LISN (for EUT)                       | EMCO         | 3810/2    | 9703-1838  | 50uH / 50 OHM   | Aug. 30, 1999    | Conduction |
| LISN<br>(for support device)         | Kyoritsu     | KNW-407   | 8-1010-15  | 50uH / 50 OHM   | Nov. 16, 1999    | Conduction |
| POWER FILTER                         | CORCOM       | MRI-2030  | N/A        | 30A*2           | N/A              | Conduction |
| Spectrum Analyzer<br>(site 3)        | Advantest    | R3261C    | 71720471   | 9KHz - 2.6GHz   | Jan. 06, 2000    | Radiation  |
| Amplifier (Site 3)                   | HP           | 8447D     | 2944A06292 | 0.1MHz -1.3GHz  | Feb. 19, 2000    | Radiation  |
| Bilog Antenna (Site 3)               | CHASE        | CBL6112A  | 2218       | 30MHz - 2GHz    | Jan. 29, 2000    | Radiation  |
| Half-wave dipole<br>antenna (Site 3) | EMCO         | 3121C     | 8912-1285  | 20MHz - 1GHz    | Aug. 07, 1999    | Radiation  |
| Turn Table                           | EMCO         | 2080      | 9508-1805  | 0 ~ 360 degree  | N/A              | Radiation  |
| Antenna Mast                         | EMCO         | 2075      | 9804-2151  | 1 m - 4 m       | N/A              | Radiation  |