

FCC TEST REPORT

for

PART 15, SUBPART B CLASS B

EQUIPMENT : JOYSTICK

MODEL NO. : Grand BogeyMan

F C C I D : FSUGJOS305D

FILING TYPE : Original Grant

APPLICANT : **KYE SYSTEMS CORP.**No. 492, Sec. 5, Chung Hsin Rd., San Chung,
Taipei Hsien, 241, Taiwan, R.O.C.

- 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.

SPORTON INTERNATIONAL INC.

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

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

FCC ID : FSUGJOS305D

PAGE NUMBER : 1 OF 22

ISSUED DATE : Nov. 10, 1998

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FCC TEST REPORT**REPORT NO. : F802302**

CERTIFICATE NO. : F802302

CERTIFICATE OF COMPLIANCE

for

FCC PART 15, SUBPART B CLASS B

EQUIPMENT : JOYSTICK


MODEL NO. : Grand BogeyMan

F C C I D : FSUGJOS305D

APPLICANT : **KYE SYSTEMS CORP.**No. 492, Sec. 5, Chung Hsin Rd., San Chung,
Taipei Hsien, 241, Taiwan, R.O.C.**I HEREBY CERTIFY THAT :**

The measurement shown in this report were made in accordance with the procedures given in **ANSI C63.4 -1992** and the energy emitted by this equipment was **passed** both radiated and conducted emissions **Class B** limits.

Testing was carried out on **Oct. 24, 1998** at **SPORTON International Inc.**



Lenore Chang
President

SPORTON INTERNATIONAL INC.

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

SPORTON International Inc.

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1. GENERAL DESCRIPTION OF EQUIPMENT UNDER TEST

1.1. APPLICANT

KYE SYSTEMS CORP.

No. 492, Sec. 5, Chung Hsin Rd., San Chung,
Taipei Hsien, 241, Taiwan, R.O.C.

1.2. MANUFACTURER

Same as 1.1

1.3. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

EQUIPMENT : JOYSTICK
MODEL NO. : Grand BogeyMan
TRADE NAME : Genius
FCC ID : FSUGJOS305D
DATA CABLE : Shielded
POWER SUPPLY TYPE : N/A
POWER CORD : N/A

1.4. FEATURE OF EQUIPMENT UNDER TEST

- A). The digital joystick Compatible with Windows 3.x / 95 / 98 and DOS environment.
B). The Digital joystick works efficiently in each game you play. It works in both analog or digital joystick mode.
- **Ten Programmable buttons :**
 - 1). Four conventional joystick buttons on the handle (button 1-4).
 - 2). Six additional buttons on the base (button 5-10).
 - **Digital Throttle :**

The throttle gives you command over incremental game functions. You can speed up, or slow down, or set the speed by yourself. It can also be assigned as thrust or altitude.
 - **Rudder :**

The Rudder gives you 3D control besides conventional x-axis and y-axis joystick movement.
 - **Hat switch :**

The Hat switch gives different and directional view to see the surroundings with a touch of the thumb.

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 SONY monitor, DELL keyboard, PRIMAX PS/2 mouse, HP printer, ACEEX modem, CREATIVE sound card and EUT were connected to the FIC P.C.
- c. Frequency range investigated: Conduction 450 KHz to 30 MHz, Radiation 30 MHz to 1000 MHz.

2.2. DESCRIPTION OF TEST SYSTEM

Support Device 1. --- MONITOR (SONY)

FCC ID : AK8GDM17SE2T
Model No. : GDM-17SE2T
Serial No. : SP1006
Data Cable : Shielded, 360 degree via metal backshells, 1.7m
Power Supply Type : Switching
Power Cord : Non-shielded

Support Device 2. --- KEYBOARD (DELL)

FCC ID : GYUM92SK
Model No. : AT101 (DE8M)
Serial No. : SP1009
Data Cable : Shielded, 360 degree via metal backshells, 1.9m

Support Device 3. --- PRINTER (HP)

FCC ID : B94C2642X
Model No. : DESKJET 400
Serial No. : SP0037
Data Cable : Shielded, 360 degree via metal backshells, 1.35m
Power Supply Type : Linear
Power Cord : Non-shielded

Support Device 4. -- MODEM (ACEEX)

FCC ID : IFAXDM1414
Model No. : DM1414
Power Supply Type : Linear, AC Adapter
Power Cord : Non-shielded
Serial No. : SP1019
Data Cable : Shielded, 360 degree via metal backshells, 1.15m

Support Device 5. -- PS/2 MOUSE (PRIMAX)

FCC ID : EMJMUSJQ
Model No. : MUS9J
Serial No. : SP1012
Data Cable : Shielded, 360 degree via metal backshells, 1.7m

Support Device 6. -- SOUND CARD (CREATIVE)

FCC ID : N/A
Model No. : CT4170
Serial No. : SP1055
Data Cable : Shielded, 1.7m

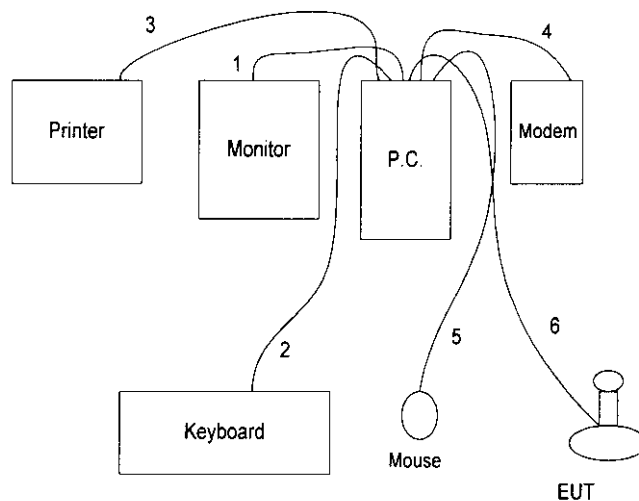
(Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.)

Support Device 7. --- P.C. (FIC)

FCC ID : N/A
Model No. : P2L97
Serial No. : SP1005
Data Cable : Shielded
Power Cord : Non-shielded
Power Supply Type : Switching

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

3. TEST SOFTWARE

An program, JOYSTICK TEST PROGRAM under WIN 98, which was provided by the applicant was used during testing.

At the same time, an executive program, EMITEST.EXE under WIN 98, which generates a complete line of continuously repeating " H " pattern was used as the test software.

The EMITEST.EXE program was 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. 30-1, Lin 6, Diing-Fwu Tsuen, Lin-Kou-Hsiang,
Taipei Hsien, Taiwan, R.O.C.

TEL : 886-2-2601-1640, FAX : 886-2-2601-1695

4.2. STANDARD FOR METHODS OF MEASUREMENT

ANSI C63.4-1992

4.3 .TEST IN COMPLIANCE WITH

FCC PART 15, SUBPART B CLASS B

4.4. FREQUENCY RANGE INVESTIGATED

- a. Conduction : from 450 KHz to 30 MHz
- b. Radiation : from 30 MHz to 1000 MHz.

4.5. TEST DISTANCE

The test distance of radiated emission from antenna to EUT is 3M.

5. TEST OF CONDUCTED POWERLINE

Conducted Emissions were measured from 450 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 Figure 5-3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

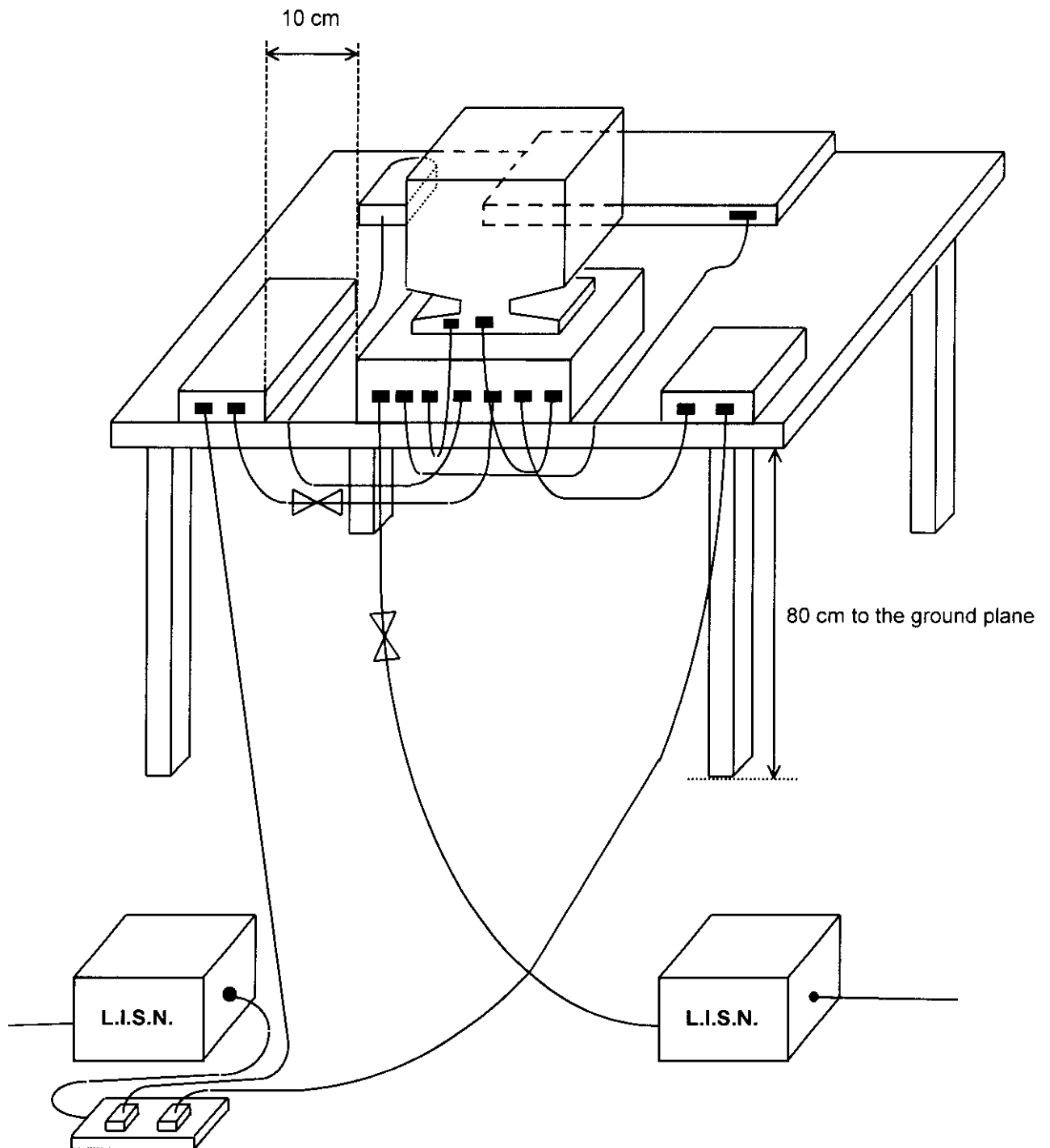
5.1. MAJOR MEASURING INSTRUMENTS

- Test Receiver (HP 8591EM)
 - Attenuation 0 dB
 - Start Frequency 0.45 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 and 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 450 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 on by one using the quasi-peak method and reported.

5.3. TYPICAL TEST SETUP LAYOUT OF CONDUCTED POWERLINE



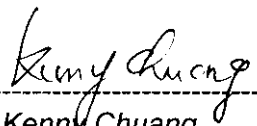
5.4. TEST RESULT OF AC POWERLINE CONDUCTED EMISSION

- Frequency Range of Test : from 0.45 MHz to 30 MHz
- All emissions not reported here are more than 10 dB below the prescribed limit.
- Temperature : 24°C
- Relative Humidity : 62 % RH
- Test Date : Oct. 24, 1998

The Conducted Emission test was passed at Line 25.05 MHz / 41.90 dBuV.

Frequency (MHz)	Line / Neutral	Meter Reading		Limits		Margin (dB)
		(dBuV)	(uV)	(dBuV)	(uV)	
0.47	Line	30.10	31.99	48.00	251.19	-17.90
20.88	Line	29.70	30.55	48.00	251.19	-18.30
25.05	Line	41.90	124.45	48.00	251.19	-6.10
0.47	Neutral	30.90	35.08	48.00	251.19	-17.10
20.89	Neutral	33.10	45.19	48.00	251.19	-14.90
25.05	Neutral	41.40	117.49	48.00	251.19	-6.60

Test Engineer :



 Kenny Chuang

6. TEST OF RADIATED EMISSION

Radiated emissions from 30 MHz to 1000 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 Figure 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 8447D)
 - Attenuation 0 dB
 - RF Gain 25 dB
 - Signal Input 0.1 MHz to 1.3 GHz

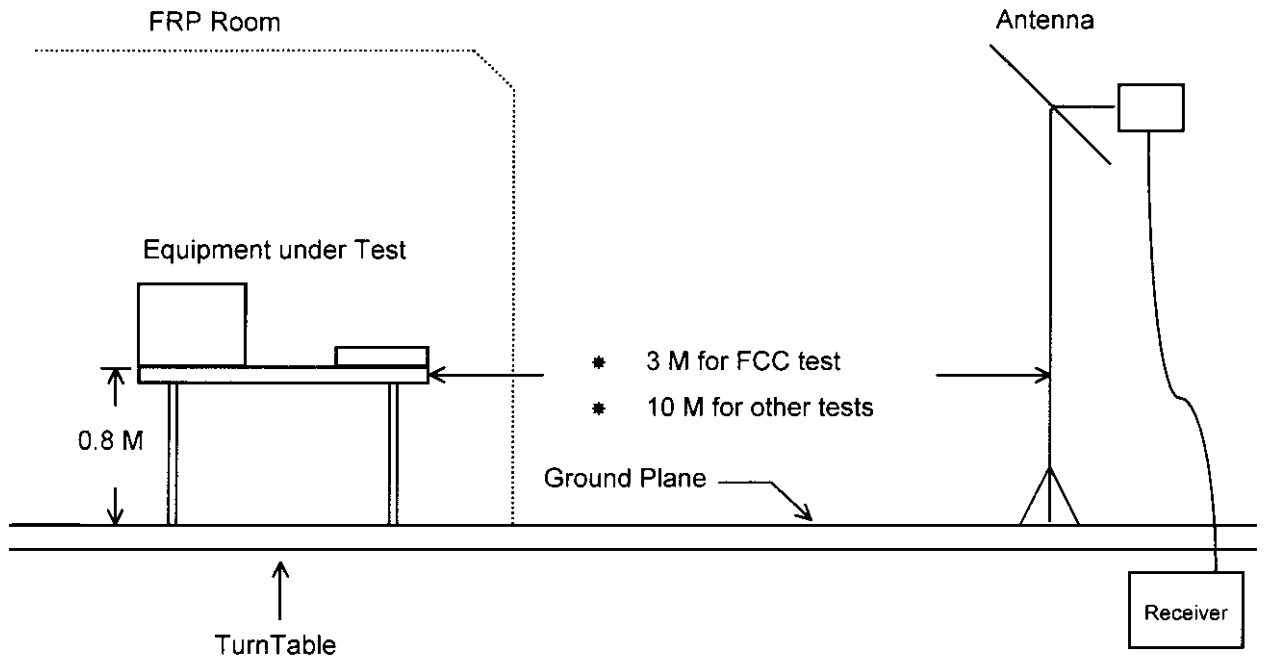
- Spectrum Analyzer (HP 8568B)
 - Attenuation 0 dB
 - Start Frequency 30 MHz
 - Stop Frequency 1000 MHz
 - Resolution Bandwidth 1 MHz
 - Video Bandwidth 1 MHz
 - Signal Input 100 Hz to 1.5 GHz

- Quasi-Peak Adapter (HP 85650A)
 - Resolution Bandwidth 120 KHz
 - Frequency Band 30 MHz to 1 GHz
 - Quasi-Peak Detector ON for Quasi-Peak Mode
OFF for Peak Mode

6.2. TEST PROCEDURES

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 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

- Equipment meets the technical specifications of 15.109
- Frequency Range of Test : from 30 MHz to 1000 MHz
- Test Distance : 3 M
- Temperature : 24°C
- Relative Humidity : 71 % RH
- Test Date : Oct. 23, 1998

- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Sample Calculation at 40.03 MHz
 Corrected Reading = 0.51 + 0.94 + 23.51 = 24.97 (dBuV/m)

The Radiated Emission test was passed at minimum margin

Vertical 40.03 MHz / 24.97 dBuV

Antenna Height 1.5 Meter , Turntable Degree 162°.

Frequency (MHz)	Polarity	Antenna Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Limits (dBuV)	(uV)	Emission Level (dBuV)	(uV)	Margin (dB)
40.03	V	0.51	0.94	23.51	40.00	100	24.97	17.72	-15.03
56.64	V	3.55	1.14	19.36	40.00	100	24.05	15.94	-15.95
49.03	V	2.18	1.00	20.48	40.00	100	23.66	15.24	-16.34
122.56	V	10.49	1.73	14.73	43.50	150	26.95	22.26	-16.55
129.48	V	10.72	1.79	14.11	43.50	150	26.63	21.45	-16.87
114.77	H	10.25	1.65	14.36	43.50	150	26.26	20.56	-17.24

Test Engineer :

James Jan

 Jones Jan

7. ANTENNA FACTOR AND CABLE LOSS

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	18.2	1.0
35	16.2	1.0
40	14.0	1.2
45	10.7	1.0
50	8.0	1.2
55	6.7	1.2
60	5.4	1.2
65	5.6	1.3
70	5.7	1.3
75	6.4	1.3
80	7.2	1.3
85	8.3	1.5
90	9.4	1.5
95	10.4	1.5
100	11.4	1.5
110	11.7	1.7
120	11.9	1.7
130	11.7	1.7
140	11.2	2.0
150	10.7	2.2
160	10.2	2.2
170	9.8	2.3
180	9.4	2.2
190	9.2	2.3
200	8.9	2.3
220	10.4	2.5
240	11.7	2.5
260	12.6	2.6
280	12.9	2.7
300	13.2	2.8
320	13.8	2.8
340	14.4	3.1
360	15.0	3.3
380	15.7	3.4
400	16.3	3.5
450	16.6	3.5
500	16.9	3.5
550	18.8	3.8
600	18.0	4.7
650	18.1	4.2
700	18.9	4.7
750	19.5	4.8
800	20.2	5.0
850	20.8	5.2
900	20.7	5.3
950	21.0	5.8
1000	21.2	5.8

8. LIST OF MEASURING EQUIPMENT USED

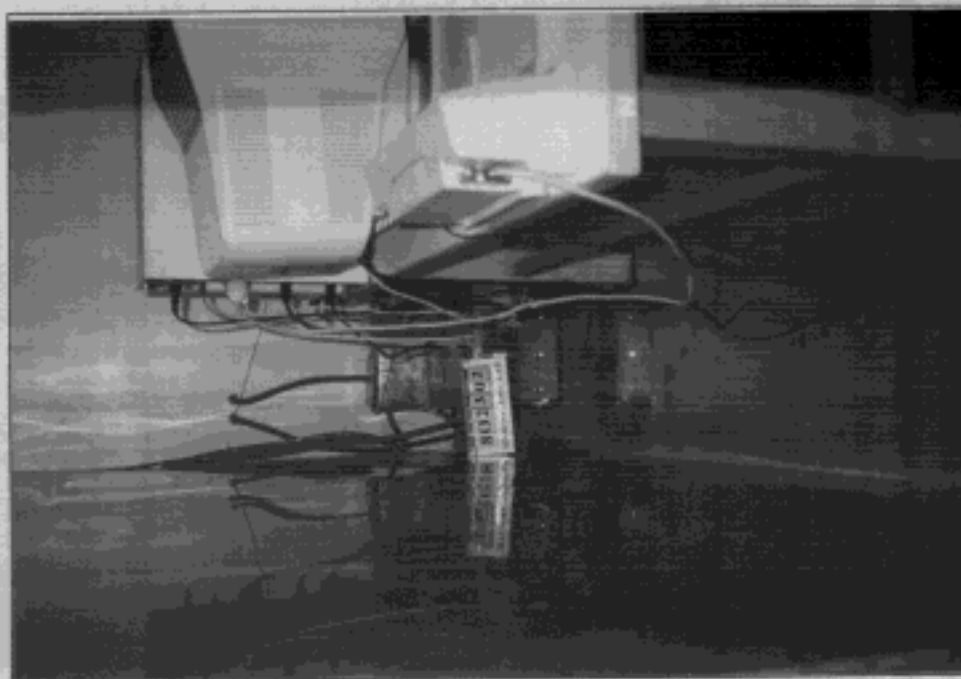
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver (site 2)	HP	8591EM	3710A01187	9 KHz - 18 GHz	Sep. 15, 1998	Conduction
LISN (EUT) (site 2)	Telemeter	NNB-2/16Z	98009	50 ohm / 50 uH	Jan. 29, 1998	Conduction
LISN (Support Unit) (site 2)	EMCO	3810/2NM	9703-1839	50 ohm / 50 uH	July. 06, 1998	Conduction
Quasi-peak Adapter (site 5)	HP	85650A	2521A00821	9KHz -1 GHz	Nov 12, 1997	Radiation
Spectrum Analyzer (Site 5)	HP	8568B	2634A03000	100Hz - 1.5GHz	Nov. 12, 1997	Radiation
Amplifier (Site 5)	HP	8447D	2944A09073	0.1MHz -1.3GHz	Dec. 20, 1997	Radiation
Bilog Antenna (Site 5)	CHASE	CBL6112A	2287	30MHz -2GHz	Jan. 27, 1998	Radiation
Half-wave dipole antenna (Site 5)	EMCO	3121C	9705-1285	28 M - 1GHz	May 19, 1998	Radiation
Turn Table (site 5)	EMCO	2080	9711-2021	0 ~ 360 degree	N/A	Radiation
Antenna Mast (site 5)	EMCO	2075	9711-2115	1 m- 4 m	N/A	Radiation

5.5. PHOTOGRAPHS OF CONDUCTED POWERLINE TEST CONFIGURATION

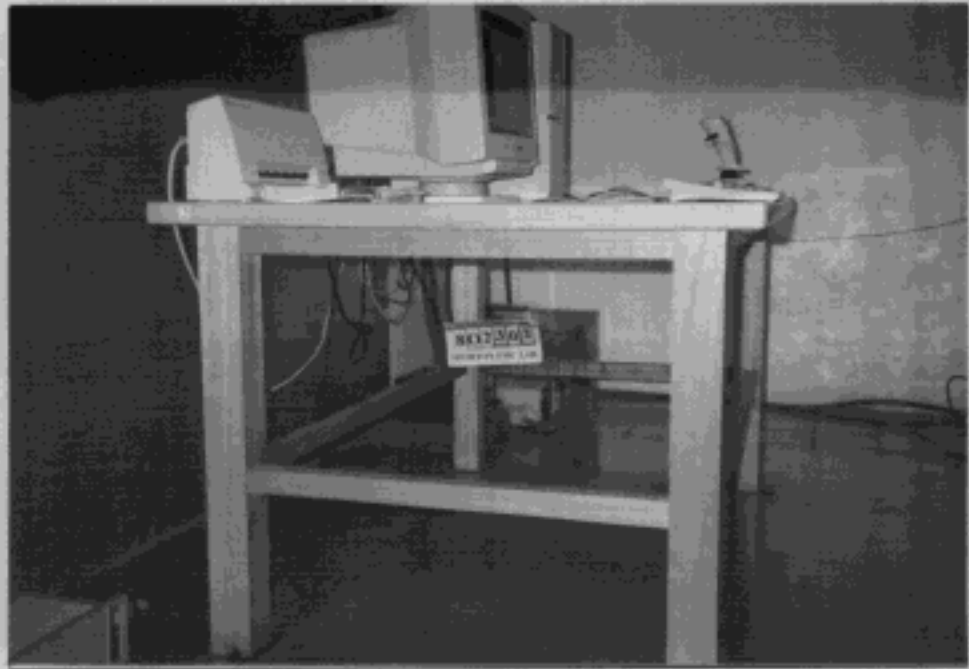
FRONT VIEW



REAR VIEW



SIDE VIEW



6.5. PHOTOGRAPHS OF RADIATED EMISSION TEST CONFIGURATION

FRONT VIEW



REAR VIEW

