

FCC TEST REPORT

for

PART 15, SUBPART B CLASS B

Equipment : KEYBOARD

MODEL NO. : SK-1500

F C C I D : GYUR63SK

Filing Type : Original Grant

APPLICANT : **SILITEK CORPORATION**

10F, No. 25, SEC. 1, Tung Hwa S. Rd.,
Taipei, 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.

TABLE OF CONTENT

SECTION TITLE	PAGE
CERTIFICATE OF COMPLIANCE	3
1. GENERAL DESCRIPTION OF EQUIPMENT UNDER TEST.....	4
1.1. APPLICANT	4
1.2. MANUFACTURER	4
1.3. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST	4
1.4. FEATURE OF EQUIPMENT UNDER TEST.....	4
2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST.....	5
2.1. TEST MANNER	5
2.2. DESCRIPTION OF TEST SYSTEM	5
2.3. CONNECTION DIAGRAM OF TEST SYSTEM.....	7
3. TEST SOFTWARE.....	8
4. GENERAL INFORMATION OF TEST.....	9
4.1. TEST FACILITY	9
4.2. STANDARD FOR METHODS OF MEASUREMENT	9
4.3. TEST IN COMPLIANCE WITH.....	9
4.4. FREQUENCY RANGE INVESTIGATED	9
4.5. TEST DISTANCE	9
5. TEST OF CONDUCTED POWERLINE.....	10
5.1. MAJOR MEASURING INSTRUMENTS.....	10
5.2. TEST PROCEDURES	11
5.3. TYPICAL TEST SETUP LAYOUT OF CONDUCTED POWERLINE	12
5.4. TEST RESULT OF AC POWERLINE CONDUCTED EMISSION	13
5.5. PHOTOGRAPHS OF CONDUCTED POWERLINE TEST CONFIGURATION	15
6. TEST OF RADIATED EMISSION.....	19
6.1. MAJOR MEASURING INSTRUMENTS.....	19
6.2. TEST PROCEDURES	20
6.3. TYPICAL TEST SETUP LAYOUT OF RADIATED EMISSION	21
6.4. TEST RESULT OF RADIATED EMISSION	22
6.5. PHOTOGRAPHS OF RADIATED EMISSION TEST CONFIGURATION	24
7. ANTENNA FACTOR AND CABLE LOSS.....	26
8. LIST OF MEASURING INSTRUMENTS USED.....	27

CERTIFICATE OF COMPLIANCE

for

FCC PART 15, SUBPART B CLASS B

Equipment : KEYBOARD

MODEL NO. : SK-1500

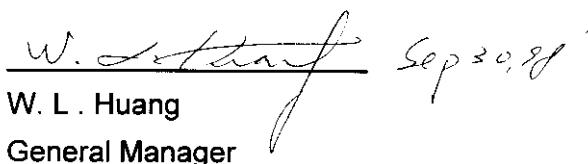
F C C I D : GYUR63SK

APPLICANT : SILITEK CORPORATION

10F, No. 25, SEC. 1, Tung Hwa S. Rd.,
Taipei, 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 Sep. 24, 1998 at **SPORTON International Inc.** in LIN KOU.


W. L. Huang
General Manager

SPORTON International Inc.

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

1. GENERAL DESCRIPTION OF EQUIPMENT UNDER TEST**1.1. APPLICANT**

SILITEK CORPORATION

10F, No. 25, SEC. 1, Tung Hwa S. Rd.,
Taipei, Taiwan, R.O.C.

1.2. MANUFACTURER

Same as 1.1

1.3. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

EQUIPMENT : KEYBOARD

MODEL NO. : SK-1500

FCC ID : GYUR63SK

TRADE NAME : SILITEK

PS/2 DATA CABLE: Shielded, 1.8m

AT DATA CABLE: Shielded, 1.3m

POWER SUPPLY TYPE : N/A

POWER CORD : N/A

1.4. FEATURE OF EQUIPMENT UNDER TEST

- The keyboard is one of the SK-1500 series products, which are 104/105 keys enhanced keyboards for IBM PC/AT, PS/2 and its compatibles. There are no software modifications or special interfaces needed.
- Electrical
 - ⇒ Input Power : +5 Vdc, 60 mA Max.
 - ⇒ Characteristics Power Consumption : 0.3 watts Max.

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, HP printer, HP PS/2 mouse and ACEEX modem and EUT were connected to the F.I.C. PC.
- c. During the test, the monitor AC power cord was plugged into the PC computer-mounted AC outlet and a floor-mounted AC outlet to search the maximum emission.
- d. 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. -- PS/2 MOUSE (HP)

FCC ID : DZL210582
Model No. : 210582
Serial No. : SP1013
Data Cable : Shielded, 1.8m

Support Device 3. --- PRINTER (HP)

FCC ID : DSI6XU2225
Model No. : 2225C
Serial No. : SP1015
Data Cable : Shielded, 360 degree via metal backshells, 1.35m
Power Supply Type : Linear, Adapter
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. --- P.C. (FIC) --- for AT mode

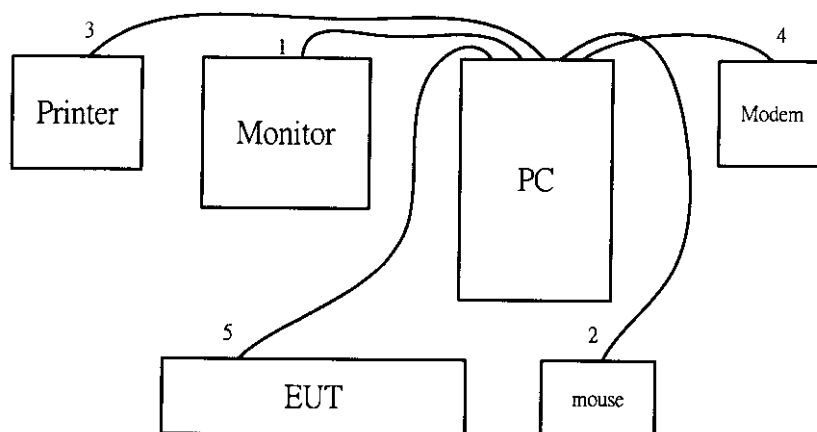
FCC ID : N/A
Model No. : P55T2P4
Serial No. : SP1003
Data Cable : Shielded
Power Cord : Non-hielded
Power Supply Type : Switching

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

Support Device 6. --- P.C. (FIC) --- for PS/2 mode

FCC ID : N/A
Model No. : P2L97
Serial No. : SP1005
Data Cable : Shielded
Power Cord : Non-hielded
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 to the support device 1.
2. The I/O cable is connected to the support device 2.
3. The I/O cable is connected to the support device 3.
4. The I/O cable is connected to the support device 4.
5. The I/O cable is connected to the EUT .

3. TEST SOFTWARE

An executive program, EMITEST.EXE under WIN98 , which generates a complete line of continuously repeating " H " pattern is used as the test software.

The 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, then 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. in an openarea test site.

Openarea 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.

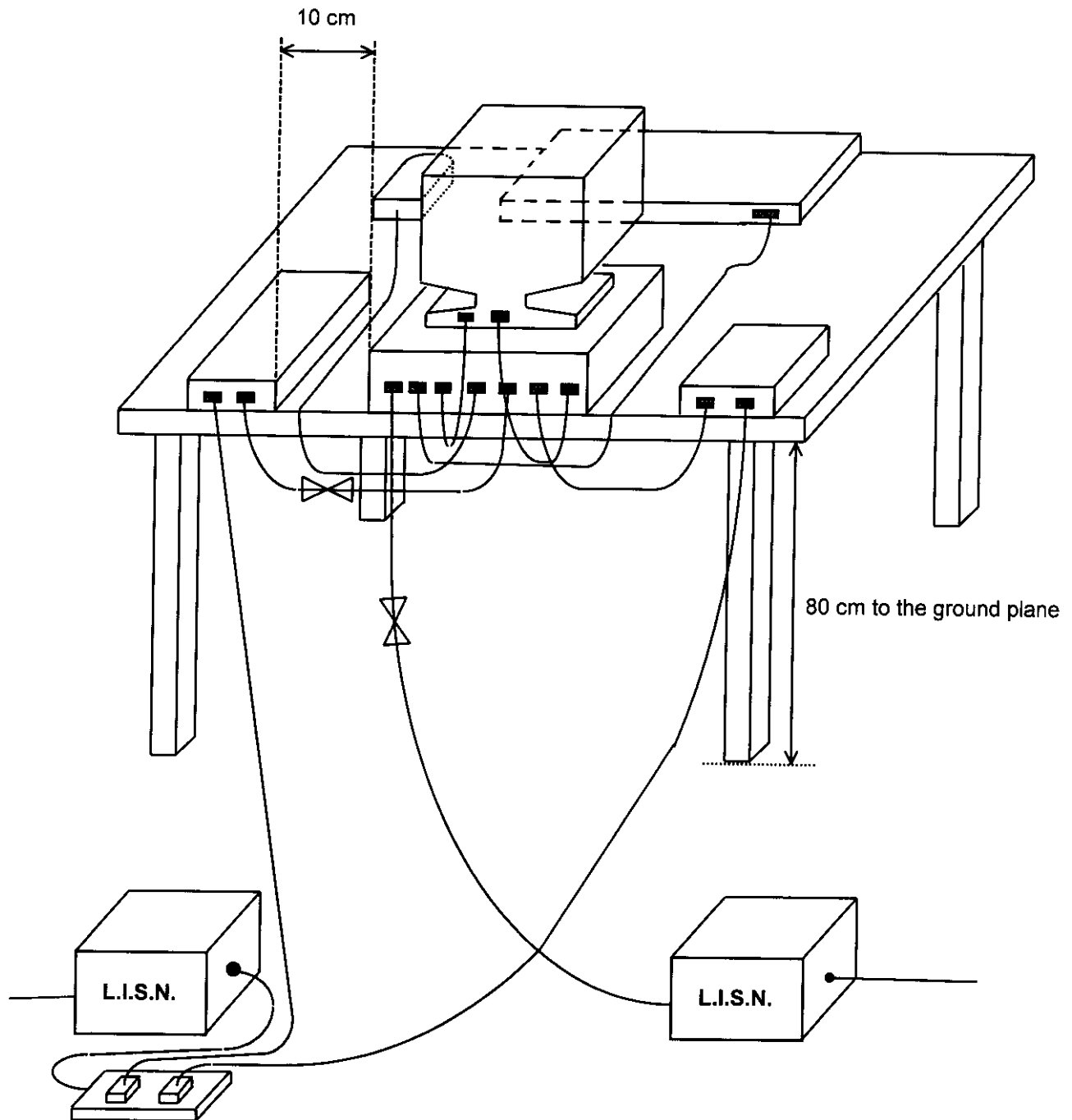
5.1. MAJOR MEASURING INSTRUMENTS

- Test Receiver (HP 85462A)
 - 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
- Temperature : 30°C
- Relative Humidity : 56% RH
- All emissions not reported here are more than 10 dB below the prescribed limit.
- Test Mode : PS/2 mode
- Test Date : Sep. 23, 1998

The Conducted Emission test was passed at minimum margin

Line 29.25 MHz / 45.00 dBuV.

Frequency (MHz)	Line / Neutral	Meter Reading			Limits		Margin
		(dBuV)	(uV)	(dBuV)	(uV)	(dB)	
21.94	L	44.00	158.49	48.00	251.19	-4.00	
24.66	L	32.90	44.16	48.00	251.19	-15.10	
29.24	L	39.50	94.41	48.00	251.19	-8.50	
21.94	N	43.50	149.62	48.00	251.19	-4.50	
25.57	N	33.20	45.71	48.00	251.19	-14.80	
29.25	N	45.00	177.83	48.00	251.19	-3.00	

Test Engineer : Jack Deng

Jack Deng

5.4.1. TEST RESULT OF AC POWERLINE CONDUCTED EMISSION

- Frequency Range of Test : from 0.45 MHz to 30 MHz
- Temperature : 30°C
- Relative Humidity : 56% RH
- All emissions not reported here are more than 10 dB below the prescribed limit.
- Test Mode : AT mode
- Test Date : Sep. 23, 1998

The Conducted Emission test was passed at minimum margin

Line 29.01 MHz / 42.20 dBuV.

Frequency (MHz)	Line / Neutral	Meter Reading			Limits		Margin
		(dBuV)	(uV)	(dBuV)	(uV)	(dB)	
21.76	L	31.60	38.02	48.00	251.19	-16.40	
25.37	L	34.20	51.29	48.00	251.19	-13.80	
29.01	L	42.20	128.82	48.00	251.19	-5.80	
21.76	N	29.70	30.55	48.00	251.19	-18.30	
25.37	N	34.10	50.70	48.00	251.19	-13.90	
29.01	N	41.60	120.23	48.00	251.19	-6.40	

Test Engineer : Jack Deng

Jack Deng

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 20 dB
 - Signal Input 0.1 MHz to 1.3 GHz

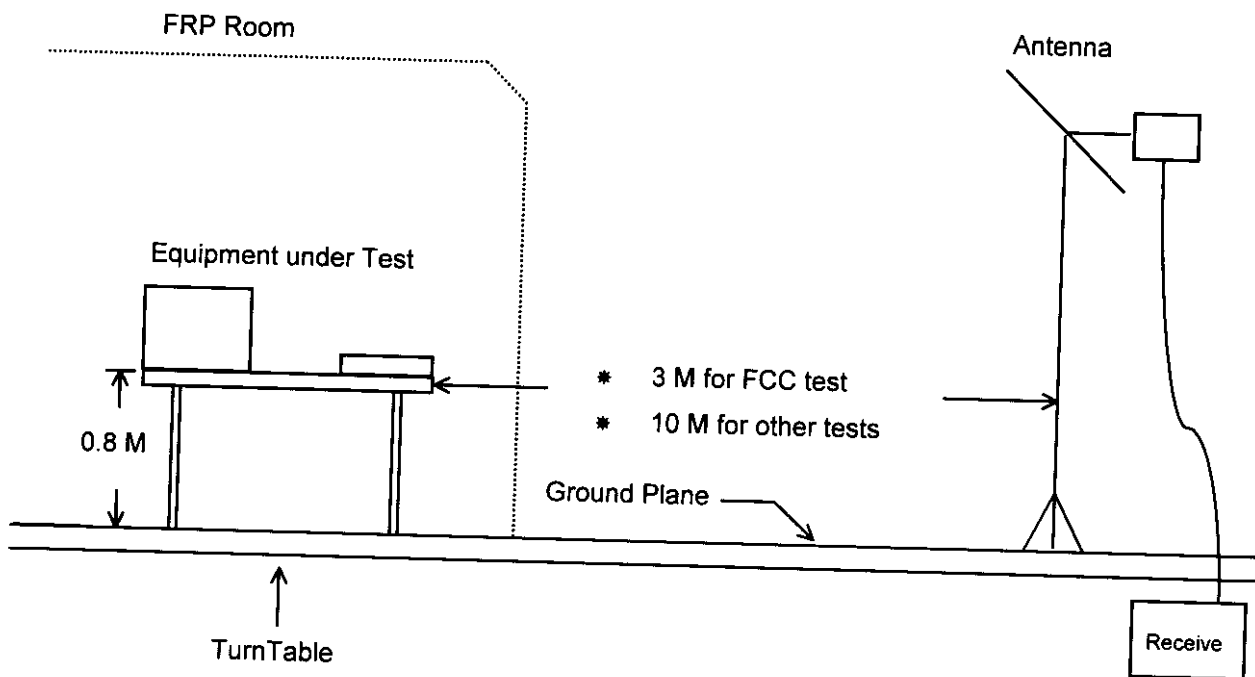
- Spectrum Analyzer (HP 8560E)
 - Attenuation 0 dB
 - Start Frequency 30 MHz
 - Stop Frequency 1000 MHz
 - Resolution Bandwidth 1 MHz
 - Video Bandwidth 1 MHz
 - Signal Input 30 Hz to 2.9 GHz

- Test Receiver (R&S ESVP)
 - 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 : 27 °C
- Relative Humidity : 45 % RH
- Test Mode : PS/2 Mode
- Test Date : Sep. 22, 1998
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Sample Calculation at 267.56 MHz
Corrected Reading = 17.26 + 2.64 + 22.24 = 42.14 (dBuV/m)

The Radiated Emission test was passed at minimum margin

Vertical 267.56 MHz / 42.14 dBuV

Antenna Height 2.5 Meter , Turntable Degree 160 °

Frequency	Antenna	Cable	Reading		Limits	Emission	Level	Margin
	Polarity	Factor	Loss					
(MHz)		(dB)	(dB)	(dBuV)	(dBuV)	(uV)	(dBuV)	(uV) (dB)
267.56	V	17.26	2.64	22.24	46.00	200	42.14	127.94 -3.86
334.51	V	18.85	3.17	18.19	46.00	200	40.21	102.45 -5.79
501.88	V	22.36	4.11	15.41	46.00	200	41.88	124.17 -4.12
33.40	V	-1.18	0.81	35.72	40.00	100	35.35	58.55 -4.65
36.92	H	-0.24	0.87	33.78	40.00	100	34.41	52.54 -5.59
267.56	H	17.26	2.64	18.90	46.00	200	38.80	87.10 -7.20

Test Engineer : _____

Jack Deng

6.4.1. 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 : 27 °C
- Relative Humidity : 45 % RH
- Test Mode : AT Mode
- Test Date : Sep. 22, 1998
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Sample Calculation at 66.50 MHz
Corrected Reading = 5.28 + 1.20 + 29.26 = 35.74 (dBuV/m)

The Radiated Emission test was passed at minimum margin

Vertical 66.50 MHz / 35.74 dBuV

Antenna Height 4.0 Meter , Turntable Degree 80 °

Frequency	Antenna	Cable	Reading		Limits	Emission	Level	Margin	
Polarity	Factor	Loss							
(MHz)	(dB)	(dB)	(dBuV)	(dBuV)	(uV)	(dBuV)	(uV)	(dB)	
66.50	V	5.28	1.20	29.26	40.00	100	35.74	61.24	-4.26
501.88	V	22.36	4.11	14.41	46.00	200	40.88	110.66	-5.12
466.01	V	22.37	3.90	14.19	46.00	200	40.46	105.44	-5.54
433.33	H	22.36	3.73	14.26	46.00	200	40.36	104.23	-5.64
267.56	H	17.26	2.64	20.57	46.00	200	40.47	105.56	-5.53
68.58	H	5.46	1.20	28.13	40.00	100	34.79	54.89	-5.21

Test Engineer : Jack Deng
Jack Deng

7. ANTENNA FACTOR AND CABLE LOSS

Frequency (Mhz)	Antenna Factor (dB)	Cable Loss (dB)
30	-1.91	0.90
35	-0.50	0.92
40	0.61	1.04
45	1.40	1.28
50	2.39	1.10
55	3.54	1.11
60	4.40	1.30
65	4.84	1.40
70	5.59	1.37
75	6.21	1.24
80	7.60	1.51
85	7.73	1.60
90	8.22	1.60
95	8.90	1.70
100	9.36	1.70
110	10.01	1.70
120	10.41	1.90
130	10.84	1.90
140	11.42	1.91
150	11.91	2.01
160	12.25	2.11
170	12.72	2.21
180	13.02	2.30
190	13.50	2.30
200	14.05	2.40
220	15.11	2.50
240	16.81	2.60
260	17.51	2.71
280	17.70	2.90
300	17.89	2.91
320	18.00	3.10
340	18.33	3.20
360	19.44	3.30
380	20.31	3.40
400	21.19	3.50
450	21.10	3.70
500	22.21	4.10
550	23.42	4.30
600	24.01	4.50
650	25.11	4.70
700	26.00	4.90
750	26.41	5.11
800	27.10	5.50
850	27.51	5.60
900	27.90	5.80
950	28.01	5.90
1000	29.00	6.20

※Remark: For frequency above 1000 MHz, we used low cable loss BNC cable to test.

8. LIST OF MEASURING INSTRUMENTS USED

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Receiver RF section (site 1)	HP	85462A	3325A00108	9 KHz - 6.5 GHz	Oct. 22, 1997	Conduction
RF Filter section (site 1)	HP	85460A	3308A00104	9 KHz - 6.5 GHz	Oct. 22, 1997	Conduction
LISN (EUT) (site 1)	EMCO	3850/2	1035	50 ohm / 50 uH	Oct. 27, 1997	Conduction
LISN (Support Unit) (site 1)	KYORITSU	KNW-407	8-693-10	50 ohm / 50 uH	Oct. 04, 1997	Conduction
EMI Filter (site 1)	CORCOM	MRI-2030	N/A	480 VAC / 30 A	N/A	Conduction
Spectrum Analyzer (Site 4)	HP	8560E	3728A03186	30Hz - 2.9GHz	Sep. 16, 1998	Radiation
Amplifier (Site 4)	HP	8447D	294409072	100K -1.3GHz	Sep. 04, 1998	Radiation
Test Receiver (Site 4)	R&S	ESVP	893610/003	20MHz - 1.3GHz	April 13, 1998	Radiation
Bilog Antenna (Site 4)	CHASE	CBL6112A	2288	30MHz -2GHz	Jul. 14, 1998	Radiation
Half-wave dipole antenna (Site 4)	EMCO	3121C	9705-1285	28 M - 1GHz	May 19, 1998	Radiation
Turn Table (site 4)	EMCO	2080	9711-1090	0 ~ 360 degree	N/A	Radiation
Antenna Mast (site 4)	EMCO	2075	9711-2114	1 m- 4 m	N/A	Radiation



D700701

SPORTON LAB.

Certificate No:

CERTIFICATE OF COMPLIANCE

Authorized under Declaration of Conformity
according to

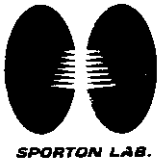
47 CFR, Part 2 and Part 15 of the FCC Rules

Equipment Under Test : **PERSONAL COMPUTER**

Model No. : **P2L97**

Applicant : **FIRST INTERNATIONAL COMPUTER INC.**

6F, Formosa Plastics Rear Building 201,
Tung Hwa N. Rd., Taipei, Taiwan, R.O.C.



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** BOTH
RADIATED AND CONDUCTED EMISSIONS CLASS B LIMITS. THE TESTING
WAS COMPLETED ON **SEP. 02, 1997** AT **SPORTON INTERNATIONAL**
INC. LAB. IN **NEI HWU**.


W. L. Huang

GENERAL MANAGER



SPORTON LAB.

Certificate No: D791002

CERTIFICATE OF COMPLIANCE

Authorized under Declaration of Conformity
according to

47 CFR, Part 2 and Part 15 of the FCC Rules

Equipment Under Test : PERSONAL COMPUTER

Model No. : P55T2P4

Applicant : FIRST INTERNATIONAL COMPUTER INC.

6F, Formosa Plastics Rear Building 201,

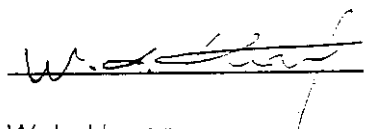
Tung Hwa N. Rd., Taipei, Taiwan, R.O.C.



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 BOTH RADIATED AND CONDUCTED EMISSIONS CLASS B LIMITS. THE TESTING WAS COMPLETED ON AUG. 20, 1997 AT SPORTON INTERNATIONAL INC. LAB IN NEI HWU.

 Sep 17, 97

W. L. Huang

GENERAL MANAGER