



FCC TEST REPORT

for

CISPR PUB. 22 Class B

Equipment : Gyro Mouse
Model No. : 9802
FCC ID : FTR9802
Filing Type : Original Grant
Applicant : **PAREX ELECTRONICS & COMPUTER CO., LTD.**
FL. 4, No. 11, ALLEY 24, LANE 68, SEC, 1,
KUANG-FU RD., SAN-CHUNG CITY, 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, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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CERTIFICATE OF COMPLIANCE

for

CISPR PUB. 22 Class B

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Model No. : 9802
FCC ID : FTR9802
Applicant : **PAREX ELECTRONICS & COMPUTER CO., LTD.**
FL. 4, No. 11, ALLEY 24, LANE 68, SEC. 1,
KUANG-FU RD., SAN-CHUNG CITY, 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 CISPR PUB. 22** both radiated and conducted emission class B limits. Testing was carried out on Feb. 9, 1999 at **SPORTON International Inc. LAB.** in Lin Kou.


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

PAREX ELECTRONICS & COMPUTER CO., LTD.
FL. 4, No. 11, ALLEY 24, LANE 68, SEC, 1, KUANG-FU RD.,
SAN-CHUNG CITY, TAIWAN, R.O.C.

1.2. Manufacturer

Same as 1.1.

1.3. Basic Description of Equipment under Test

Equipment : Gyro Mouse
Model No. : 9802
FCC ID : FTR9802
Trade Name : PAREX
Data Cable : Shielded, 1.5 m
Power Supply Type : N/A
Power Cord : N/A

1.4. Feature of Equipment under Test

- What is gyro scroll mouse.
A Gyro scroll mouse is a PNP mouse with 3 buttons, 538 DPI and, most specially, with a gyro stick and comfortable colorful appearance.
- High resolution
Gyro scroll mouse has high resolution with 538 DPI. Try it for the good performance.
- Special zoom function
Gyro scroll mouse has a zoom function, and use the stick to adjust the zoom area in vertically and horizontally.
- Re_definable Third button
The third button is able to redefine by entering the mouse control panel, to set the function by you self.
- Combo interface
6 pin mini din for PS/2 interface, and 9 pin D_type for serial interface. Auto detection combo function.

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 DELL PS/2 Keyboard, SONY Monitor, HP Printer, ACEEX Modem and EUT were connected to the FIC PC for EMI test.
- c. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 1,000 MHz.

2.2. Description of Test System

Support Unit 1. -- Personal Computer (FIC)

FCC ID : N/A
Model No. : P2L97
Power Supply Type : Switching
Power Cord : Non-Shielded
Serial No. : SP0037
Data Cable : Shielded, 360 degree via metal backshells
Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

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

FCC ID : GYUM92SK
Model No. : AT101(DE8M)
Serial No. : SP0054
Data Cable : Shielded, 360 degree via metal backshells

Support Unit 3. -- Monitor (SONY)

FCC ID : AK8GDM17SE2T
Model No. : GDM-17SE2T
Power Supply Type : Switching
Power Cord : Non-Shielded
Serial No. : SP0043
Data Cable : Double-Shielded, 360 degree via metal backshells, 1.8m

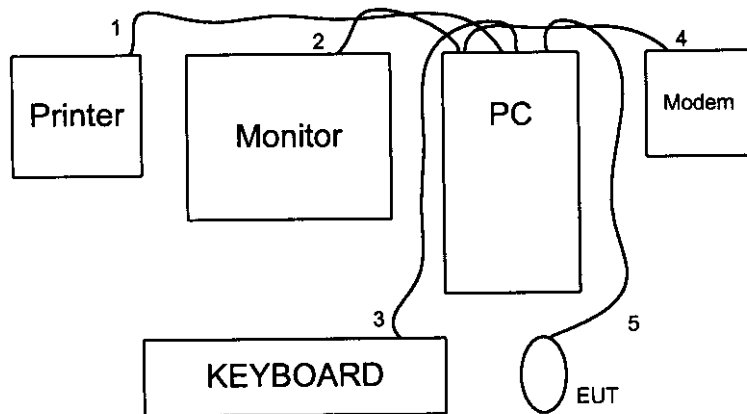
Support Unit 4. -- Printer (HP)

FCC ID : B94C2642X
Model No. : Desk Jet 400
Power Supply Type : Linear
Power Cord : N/A
Serial No. : SP0048
Data Cable : Braided-Shielded, 360 degree via metal backshells

Support Unit 5. -- Modem (ACEEX)

FCC ID : IFAXDM1414
Model No. : DM1414
Power Supply Type : Linear
Power Cord : N/A
Serial No. : SP0059
Data Cable : Braided-Shielded, 360 degree via metal backshells

2.3. Connection Diagram of Test System



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

3. Test Software

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 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. in an openarea test site.
Openarea Test Site Location : No. 30-2, 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

CISPR PUB. 22 Class B

4.4. Frequency Range Investigated

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation : from 30 MHz to 1,000 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.

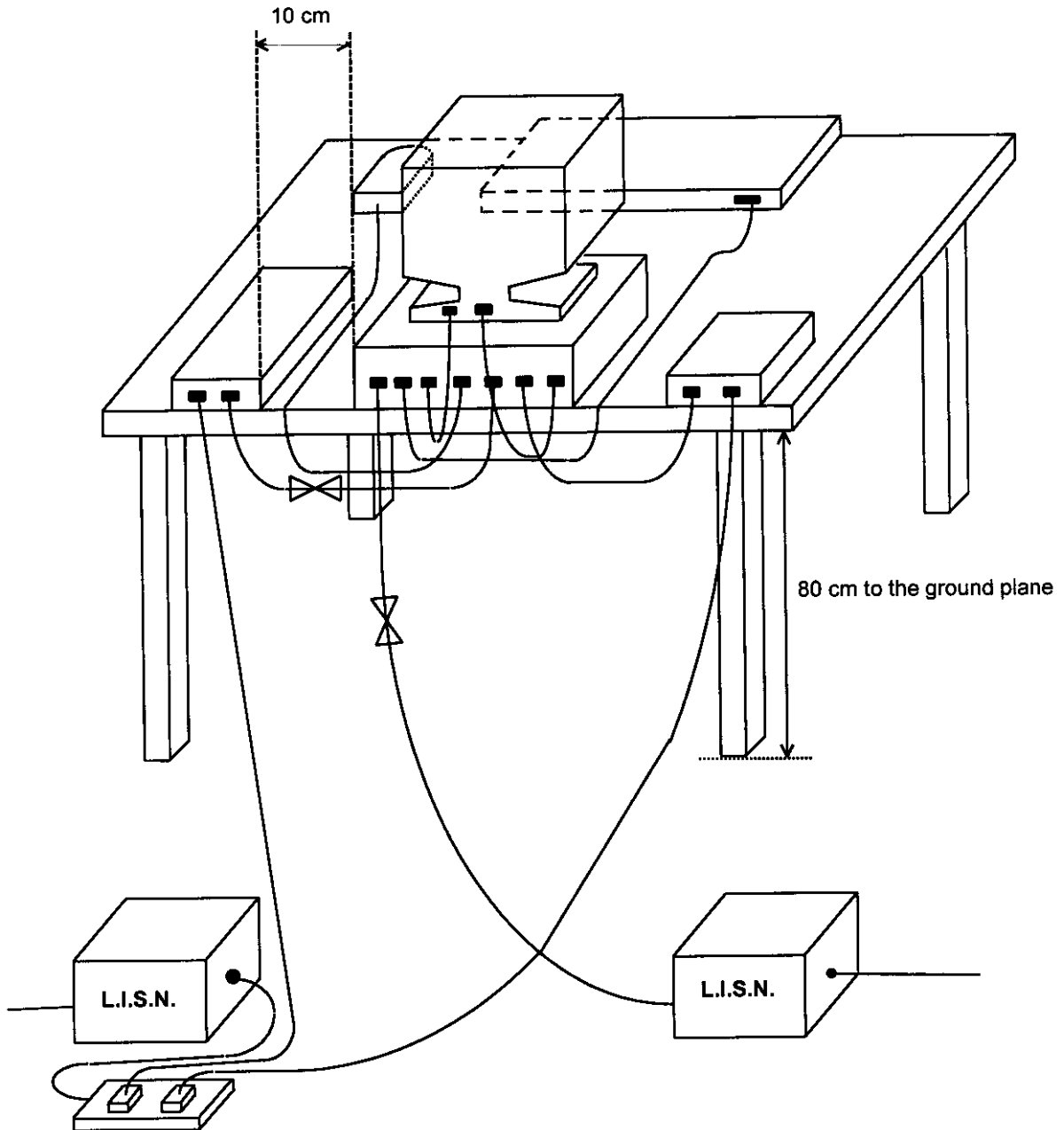
5.1. Major Measuring Instruments

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 : Serial mode

- Frequency Range of Test : from 0.15 MHz to 30 MHz
- All emissions not reported here are more than 10 dB below the prescribed limit.
- Temperature : 20°C
- Relative Humidity : 61 %
- Test Date : Feb. 09, 1999
- All emissions not reported here are more than 10 dB below the prescribed limit.

The Conducted Emission test was passed at minimum margin

LINE 11.818 MHz / 41.10 dBuV.

Freq. (MHz)	Line or Neutral	Meter Reading				Limits				Margin	
		Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dB)	A.V. (dB)
0.219	L	42.80	38.50	138.04	84.14	64.03	54.03	1590.12	502.84	-21.23	-15.53
11.818	L	41.10	40.30	113.50	103.51	60.00	50.00	1000.00	316.23	-18.90	-9.70
22.571	L	38.70	38.20	86.10	81.28	60.00	50.00	1000.00	316.23	-21.30	-11.80
0.221	N	43.90	41.60	156.68	120.23	63.97	53.97	1578.65	499.21	-20.07	-12.37
11.819	N	41.10	40.20	113.50	102.33	60.00	50.00	1000.00	316.23	-18.90	-9.80
22.570	N	40.80	40.00	109.65	100.00	60.00	50.00	1000.00	316.23	-19.20	-10.00

Test Engineer : Kenny Chuang
KENNY CHUANG

5.4.2. Test mode : PS/2 mode

- Frequency Range of Test : from 0.15 MHz to 30 MHz
- All emissions not reported here are more than 10 dB below the prescribed limit.
- Temperature : 20°C
- Relative Humidity : 61 %
- Test Date : Feb. 09, 1999
- All emissions not reported here are more than 10 dB below the prescribed limit.

The Conducted Emission test was passed at minimum margin

LINE 11.820 MHz / 41.80 dBuV.

Freq. (MHz)	Line or Neutral	Meter Reading				Limits				Margin	
		Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dB)	A.V. (dB)
0.223	L	43.20	41.00	144.54	112.20	63.91	53.91	1569.33	496.27	-20.71	-12.91
11.820	L	41.80	41.00	123.03	112.20	60.00	50.00	1000.00	316.23	-18.20	-9.00
27.711	L	40.80	40.70	109.65	108.39	60.00	50.00	1000.00	316.23	-19.20	-9.30
0.219	N	44.30	39.40	164.06	93.33	64.03	54.03	1590.12	502.84	-19.73	-14.63
11.819	N	40.60	39.00	107.15	89.13	60.00	50.00	1000.00	316.23	-19.40	-11.00
22.570	N	40.00	39.40	100.00	93.33	60.00	50.00	1000.00	316.23	-20.00	-10.60

Test Engineer : Kenny Chuang
KENNY CHUANG

6. Test of Radiated Emission

Radiated emissions from 30 MHz to 1,000 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 8447D)
 - Attenuation 0 dB
 - RF Gain 20 dB
 - Signal Input 0.1 MHz to 1.3 GHz

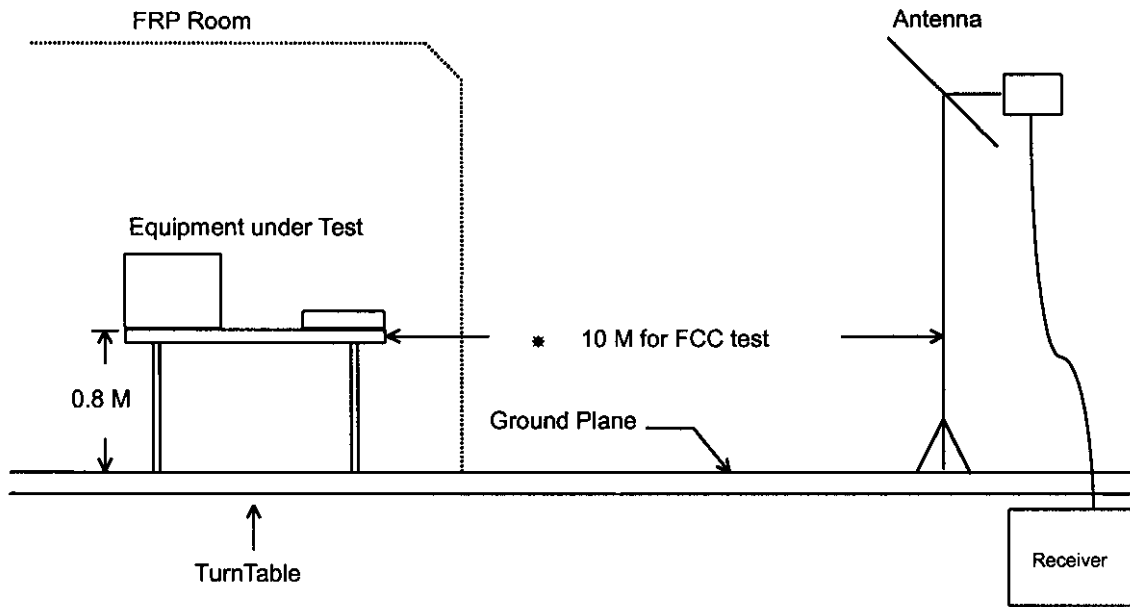
- Spectrum Analyzer (HP 8568B)
 - Attenuation 0 dB
 - Start Frequency 30 MHz
 - Stop Frequency 1000 MHz
 - Resolution Bandwidth 1 MHz
 - Video Bandwidth 1 MHz
 - Signal Input 100 Hz to 1.5 GHz

- 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 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 : Serial mode

- Test Distance : 10 M
- Temperature : 20°C
- Relative Humidity : 64 %
- Test Date : Feb. 8, 1999
- 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

45.00 MHz / 26.82 dBuV (VERTICAL) Antenna Height 1.0 Meter, Turntable Degree 139 °.

Frequency (MHz)	Antenna Polarity	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Limits (dBuV/m)	Emission (uV/m)	Level (uV/m)	Margin (dB)	
35.10	H	15.55	1.10	7.46	30.00	32	24.11	16.05	-5.89
47.40	H	9.09	1.20	13.77	30.00	32	24.06	15.96	-5.94
50.30	H	7.90	1.20	13.98	30.00	32	23.08	14.26	-6.92
38.20	V	13.94	1.04	11.51	30.00	32	26.48	21.25	-3.52
45.00	V	10.10	1.20	15.52	30.00	32	26.82	21.93	-3.18
47.53	V	9.04	1.20	15.32	30.00	32	25.56	18.97	-4.44

Test Engineer : William Lee
 WILLIAM LEE

6.4.2. Test mode : PS/2 mode

- Equipment meets the technical specifications of 15.109
- Frequency Range of Test : from 30 MHz to 1000 MHz
- Test Distance : 10 M
- Temperature : 20°C
- Relative Humidity : 64 %
- Test Date : Feb. 08, 1999
- 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

44.55 MHz / 26.93 dBuV (VERTICAL) Antenna Height 1.0 Meter, Turntable Degree 124 °.

Frequency (MHz)	Antenna Polarity	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Limits (dBuV/m)	Emission (uV/m)	Level (uV/m)	Margin (dB)	
32.90	H	16.48	1.02	9.25	30.00	32	26.75	21.75	-3.25
50.20	H	7.94	1.20	16.84	30.00	32	25.98	19.91	-4.02
41.59	V	12.08	1.06	12.83	30.00	32	25.97	19.88	-4.03
44.55	V	10.36	1.18	15.39	30.00	32	26.93	21.25	-3.07
53.47	V	6.89	1.20	18.49	30.00	32	26.58	21.33	-3.42
54.45	V	6.58	1.20	18.97	30.00	32	26.75	21.75	-3.25

Test Engineer : William Lee
WILLIAM LEE

7. Antenna Factor & Cable Loss

Frequency (Mhz)	Antenna Factor (dB)	Cable Loss (dB)
30	16.7	1.0
35	15.5	1.2
40	14.2	1.2
45	11.3	1.3
50	8.4	1.2
55	6.8	1.3
60	5.1	1.5
65	5.6	1.3
70	6.1	1.5
75	6.6	1.5
80	7.2	1.7
85	8.2	1.5
90	9.2	1.7
95	10.0	1.7
100	10.8	1.7
110	11.7	2.0
120	12.4	2.0
130	11.8	2.0
140	10.8	2.2
150	10.8	2.2
160	10.5	2.3
170	10.1	2.2
180	9.7	2.3
190	9.4	2.5
200	9.0	2.5
220	10.0	2.6
240	11.0	2.7
260	11.8	2.7
280	12.3	2.9
300	12.9	3.2
320	13.8	3.3
340	14.8	3.3
360	15.6	3.3
380	16.1	3.4
400	16.6	3.5
450	16.7	3.8
500	17.7	4.2
550	19.0	4.3
600	19.0	4.5
650	18.7	4.7
700	18.7	4.8
750	19.9	5.2
800	21.3	5.3
850	21.4	5.7
900	21.2	5.7
950	22.4	6.0
1000	23.0	6.2

8. List of Measuring Equipments Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver (site 2)	HP	8591EM	3710A01187	9 KHz – 1.8 GHz	Sep. 18, 1998	Conduction
LISN (EUT) (site 2)	Telemeter	NNB-2/16Z	98009	50 ohm / 50 uH	Jan. 22, 1999	Conduction
LISN (Support Unit) (site 2)	EMCO	3810/2NM	9703-1839	50 ohm / 50 uH	Jul. 06, 1998	Conduction
Quasi-peak Adapter (site 3)	HP	85650A	2811A01116	9KHz -1 GHz	Jul. 19, 1998	Radiation
Amplifier (Site 3)	HP	8447D	2944A09068	0.1MHz -1.3GHz	Aug. 27, 1998	Radiation
Spectrum Analyzer (site 3)	HP	8568B	2732A04100	100Hz – 1.5GHz	July 19, 1998	Radiation
Bilog Antenna (Site 3)	CHASE	CBL6112A	2320	30MHz -2GHz	Sep. 10, 1998	Radiation
Half-wave dipole antenna (Site 3)	EMCO	3121C	9705-1285	28 M - 1GHz	May 19, 1998	Radiation
Turn Table (site 3)	EMCO	2080	9711-2022	0 ~ 360 degree	N/A	Radiation
Antenna Mast (site 3)	EMCO	2075	9710-2101	1 m- 4 m	N/A	Radiation



SPORTON LAB.

Certificate No: D700701

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 OCT 08, 1997

W. L. Huang
GENERAL MANAGER

EXHIBIT C