

FCC TEST REPORT

for

CISPR PUB. 22 Class B

Equipment : ADF(Automatic Document Feeder) and
TPA(Transparency Adaptor)

Model No. : ADFilm

FCC ID : ITEUECADFILM

Filing Type : CERTIFICATION

Applicant : **ULTIMA ELECTRONICS CORP.**
9F, No. 18, Alley 1, Lane 768, Sec. 4, Pa Te Rd.,
Taipei Hsien, 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.
- **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

CISPR PUB. 22 Class B

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Model No. : ADFilm

FCC ID : ITEUECADFILM

Applicant : **ULTIMA ELECTRONICS CORP.**
9F, No. 18, Alley 1, Lane 768, Sec. 4, Pa Te Rd.,
Taipei Hsien, Taiwan, R.O.C.

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 Apr. 8, 1999 at **SPORTON International Inc. LAB.**


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

ULTIMA ELECTRONICS CORP.
9F, No. 18, Alley 1, Lane 768, Sec. 4, Pa Te Rd.,
Taipei Hsien, Taiwan, R.O.C.

1.2. Manufacturer

Same as 1.1.

1.3. Basic Description of Equipment under Test

Equipment : ADF(Automatic Document Feeder) and
TPA(Transparency Adaptor)
Model No. : ADFilm
FCC ID : ITEUECADFILM
Trade Name : ULTIMA
DATA CABLE (to printer port) : Shielded, 1.2m
DATA CABLE (to ADF) : Shielded, 0.2m
Power Supply Type : Switching
Power Input Cord : N/A
Power Ourput Cord : Non-Shielded, 1.7m

1.4. Feature of Equipment under Test

- High Performance with Low Cost Color Scanner Accessory.
- ADF(Automatic Document Feeder) and TPA(Transparency Adaptor) function in one device.
- ADFilm can be combined with AM24E to AM24E PRO.
- ADFilm also can be combined with AM24S to AM24S PRO.
- TPA(Transparency Adaptor) : full step 600 dpi.
- ADF(Automatic Document Feeder) : full step 600 dpi.

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 PS/2 Keyboard, PRIMAX PS/2 Mouse, 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. -- Monitor (SONY)

FCC ID	: AK8GDM17SE2T
Model No.	: GDM-17SE2T
Power Supply Type	: Switching
Power Cord	: Non-Shielded
Serial No.	: SP0023
Data Cable	: Shielded, 360 degree via metal backshells, 1.75m

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

FCC ID	: GYUM90SK
Model No.	: AT101W
Serial No.	: SP0019
Data Cable	: Shielded, 360 degree via metal backshells, 2.0m

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

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

Support Unit 4. -- Printer (HP)

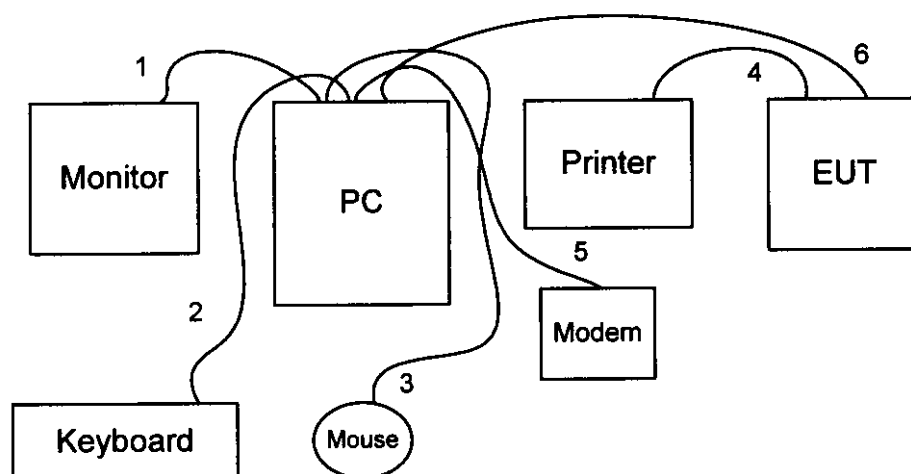
FCC ID	: DSI6XU2225
Model No.	: 2225C
Power Supply Type	: Linear
Power Cord	: Non-Shielded
Serial No.	: SP0024
Data Cable	: Shielded, 360 degree via metal backshells, 1.2m

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, 360 degree via metal backshells, 1.2m

Support Unit 6. -- Personal Computer (FIC)

FCC ID : N/A
Model No. : P2L97
Power Supply Type : Switching
Power Cord : Non-Shielded
Serial No. : SP0006
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 to the support unit 1.
2. The I/O cable is connected to the support unit 2.
3. The I/O cable is connected to the support unit 3.
4. The I/O cable is connected from EUT to the support unit 4.
5. The I/O cable is connected to the support unit 5.
6. The I/O cable is connected from EUT to the support unit 6.

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. 3, Lane 238, Kang Lo Street, Nei Hwu District,

Taipei 11424, Taiwan, R.O.C.

TEL : 886-2-2631-9739

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 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.

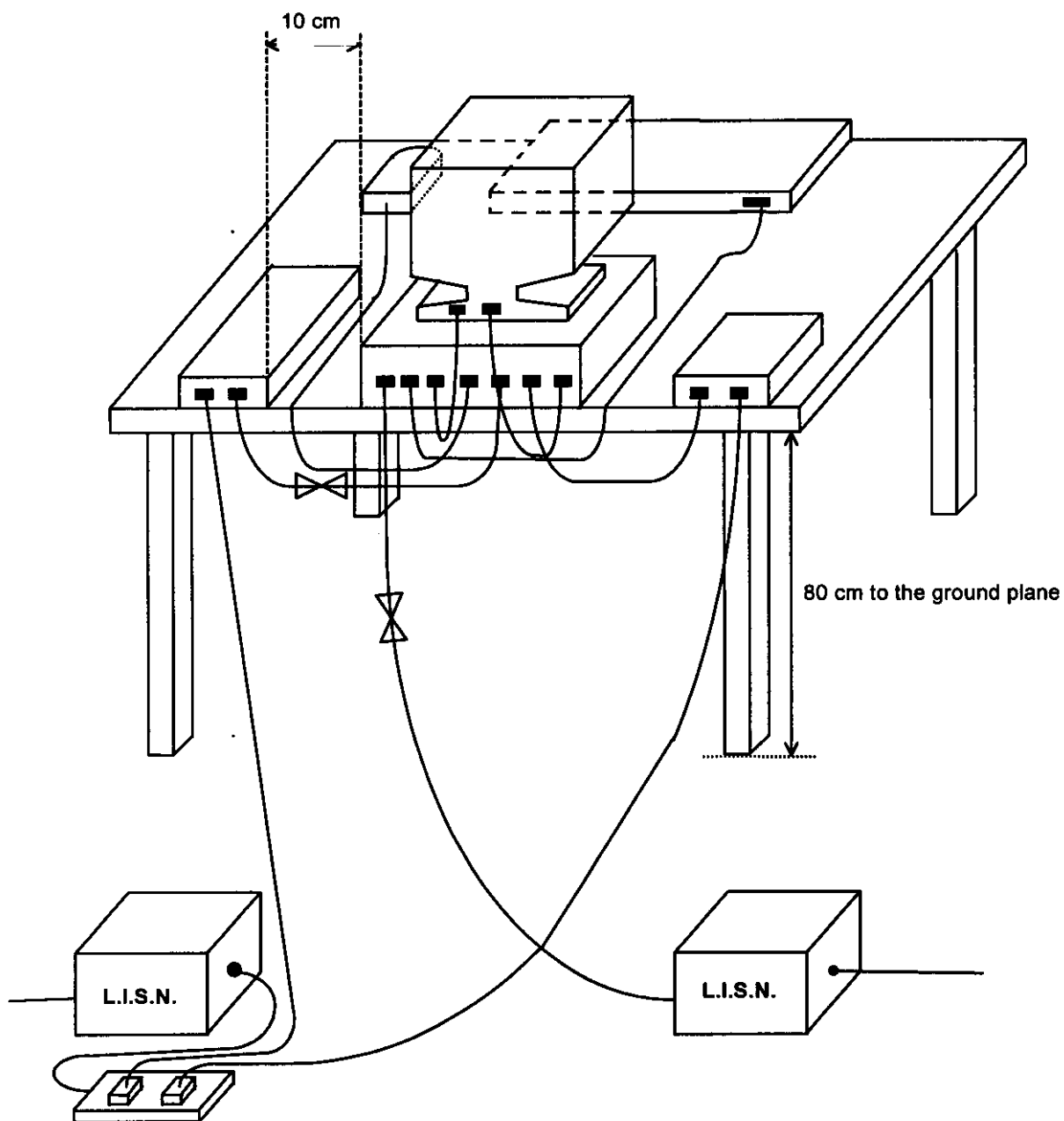
5.1. Major Measuring Instruments

Test Receiver	R&S ESH3
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

- Frequency Range of Test : from 0.15 MHz to 30 MHz
- Temperature : 25°C
- Relative Humidity : 45 %
- Test Date : Apr. 8, 1999

The Conducted Emission test was passed at minimum margin

LINE 1.220 MHz / 44.90 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)
0.510	L	43.90	39.50	156.68	94.41	56.00	46.00	630.96	199.53	-12.10	-6.50
1.220	L	44.90	39.60	175.79	95.50	56.00	46.00	630.96	199.53	-11.10	-6.40
5.000	L	44.60	41.20	169.82	114.82	56.00	46.00	630.96	199.53	-11.40	-4.80
0.510	N	43.20	39.10	144.54	90.16	56.00	46.00	630.96	199.53	-12.80	-6.90
1.220	N	43.10	39.00	142.89	89.13	56.00	46.00	630.96	199.53	-12.90	-7.00
5.000	N	44.90	42.20	175.79	128.82	56.00	46.00	630.96	199.53	-11.10	-3.80

Test Engineer : Louis Lin
LOUIS LIN

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 25 dB
 - Signal Input 0.1 MHz to 1.3 GHz

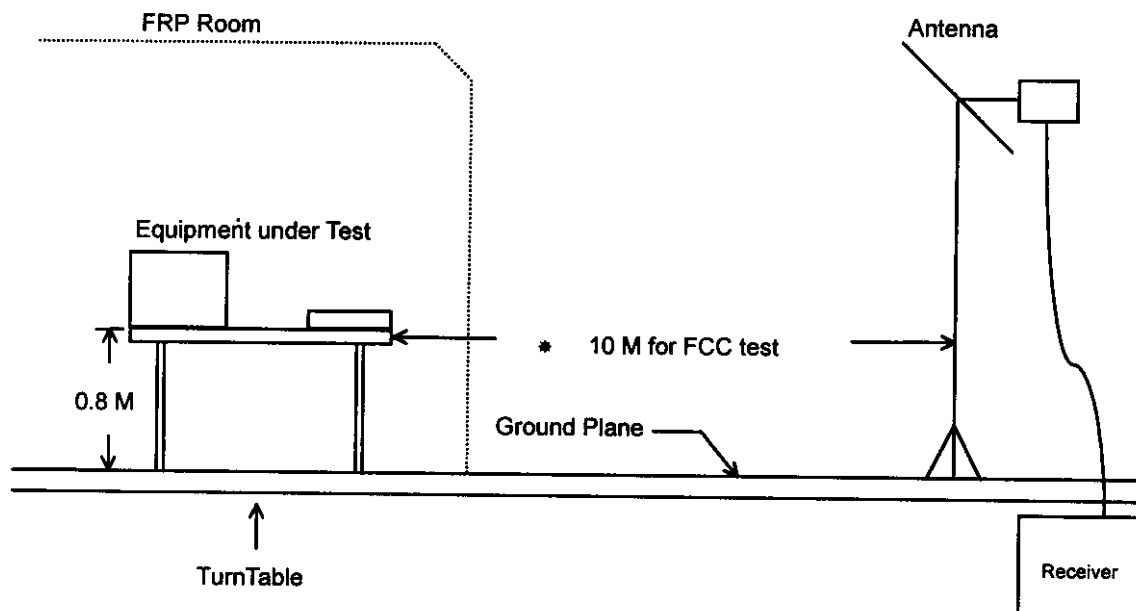
- Spectrum Analyzer (ADVANTEST R3261C)
 - Attenuation 0 dB
 - Start Frequency 30 MHz
 - Stop Frequency 1000 MHz
 - Resolution Bandwidth 1 MHz
 - Video Bandwidth 1 MHz
 - Signal Input 9 KHz to 2.6 GHz

- Spectrum Analyzer (ADVANTEST R3261C)
 - 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

- Frequency Range of Test : from 30 MHz to 1,000 MHz
- Test Distance : 10 M
- Temperature : 28°C
- Relative Humidity : 50 %
- Test Date : Apr. 6, 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

175.690 MHz / 26.89 dBuV (VERTICAL) Antenna Height 1 Meter, Turntable Degree 260 °.

Frequency (MHz)	Polarity	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Limits		Emission (dBuV/m)	Level (uV/m)	Margin (dB)
					(dBuV/m)	(uV/m)			
112.110	V	11.65	1.34	13.19	30.00	31.62	26.18	20.37	-3.82
175.690	V	9.61	1.77	15.51	30.00	31.62	26.89	22.11	-3.11
208.800	V	9.92	1.65	14.46	30.00	31.62	26.03	20.02	-3.97
291.200	V	13.15	1.98	17.79	37.00	70.79	32.92	44.26	-4.08
175.860	H	9.61	1.77	15.14	30.00	31.62	26.52	21.18	-3.48
208.800	H	9.92	1.65	14.26	30.00	31.62	25.83	19.57	-4.17

Test Engineer :

Louis Lin

LOUIS LIN

7. Antenna Factor & Cable Loss

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	17.2	0.8
35	16.2	0.9
40	13.0	0.9
45	10.5	0.9
50	7.0	1.0
55	6.2	1.1
60	5.3	1.1
65	5.2	1.1
70	5.2	1.1
75	5.9	1.1
80	6.8	1.2
85	7.9	1.2
90	9.0	1.2
95	9.8	1.3
100	10.6	1.4
110	11.5	1.3
120	12.3	1.3
130	10.9	1.3
140	10.5	1.2
150	10.5	1.5
160	9.6	1.6
170	9.6	1.5
180	9.7	2.0
190	9.5	1.8
200	9.4	1.6
220	10.7	1.7
240	12.0	1.8
260	12.8	1.9
280	13.0	2.0
300	13.3	2.0
320	13.8	2.1
340	14.3	2.2
360	14.7	2.4
380	15.1	2.5
400	15.5	2.6
450	16.7	2.8
500	17.8	2.9
550	19.2	2.9
600	19.0	2.9
650	18.7	3.3
700	18.5	3.7
750	18.5	3.6
800	16.8	3.4
850	17.0	3.7
900	19.0	4.0
950	19.9	4.1
1000	20.4	4.2

8. List of Measuring Equipments Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Test Receiver	R&S	ESH3	893495/013	9 KHz - 30 MHz	Apr. 13, 1998	Conduction
LISN (for EUT)	KYORITSU	KNW-407	8-1010-15	50 ohm / 50 μ H	Nov. 17, 1998	Conduction
LISN (for support device)	EMCO	3810/2	9703-1838	50 ohm / 50 μ H	Aug. 27, 1998	Conduction
EMI Filter	CORCOM	MRI-2030	N/A	480VAC / 30A	N/A	Conduction
Spectrum Monitor	R&S	EZM	894987/011	N/A	Apr. 13, 1998	Conduction
Amplifier (Site 1)	HP	8447D	2944A07523	0.1MHz -1.3GHz	Jan. 20, 1999	Radiation
Spectrum Analyzer (site 1)	ADVANTEST	R3261C	81720145	9KHz - 2.6GHz	Mar. 08, 1999	Radiation
Bilog Antenna (site 1)	CHASE	CBL6112A	2302	30MHz - 2GHz	Jan. 30, 1999	Radiation
Half-wave dipole antenna (site 1)	EMCO	3121C	8912-496	20MHz - 1GHz	Aug. 08, 1998	Radiation
Turn Table	EMCO	1060-1.211	9507-1805	0 ~ 360 degree	N/A	Radiation
Antenna Mast	EMCO	2075	9806-2160	1 m - 4 m	N/A	Radiation



D7O0701

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

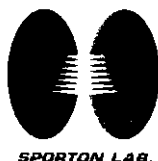


Equipment Under Test : PERSONAL COMPUTER

Model No. : P2L97

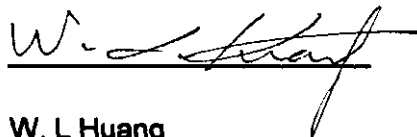
Applicant : FIRST INTERNATIONAL COMPUTER INC.

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**.

 OCT 02, 97

W. L. Huang

GENERAL MANAGER

