

FCC TEST REPORT

for

CISPR PUB. 22 Class B

Equipment : LCD COLOR MONITOR

Model No. : 15tp

FCC ID : NPU15TP

Filing Type : Original Grant

Applicant : **Ariestec, INC.**
3FL., NO. 100, MIN-CHUAN ROAD,
HSIN TIEN CITY, 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.
- **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

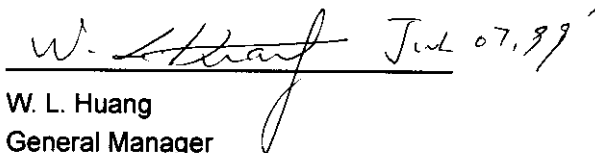
for

CISPR PUB. 22 Class B

Equipment : LCD COLOR MONITOR
Model No. : 15tp
FCC ID : NPU15TP
Applicant : **Ariestec, INC.**
3FL., NO. 100, MIN-CHUAN ROAD,
HSIN TIEN CITY, TAIPEI, 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 Jun. 28, 1999 at **SPORTON International Inc.** LAB. in Nei Hwu.


W. L. Huang
General Manager

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

Ariestec, INC.
3FL., NO. 100, MIN-CHUAN ROAD,
HSIN TIEN CITY, TAIPEI, TAIWAN, R.O.C.

1.2. Manufacturer

Same as 1.1.

1.3. Basic Description of Equipment under Test

Equipment : LCD COLOR MONITOR
Model No. : 15tp
FCC ID : NPU15TP
Trade Name : Ariestec
Output power cable : Shielded, 1.5 m
LCD cable : Shielded, 1.6 m
Power Supply Type : Switching
Input power Cord : Non-Shielded, 1.8m

1.4. Feature of Equipment under Test

Dot Pitch (mm)	
Horizontal	0.30
Vertical	0.30
Display Size	15.1"
Scanning Frequency	
Horizontal (KHz)	30~48
Vertical (Hz)	50~60
Resolution	1024x768
Band Width	65MHz
Signal Cable	20pin MDR connector
Power	
Consumption	50W
Supply	10-250V AC 50/60Hz Adapter
Power Management	Complied with EPA & VESA DPMS

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, 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 1000MHz.

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	: GYUM90SK
Model No.	: AT101W
Serial No.	: SP0019
Data Cable	: Shielded, 360 degree via metal backshells, 2.5m

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

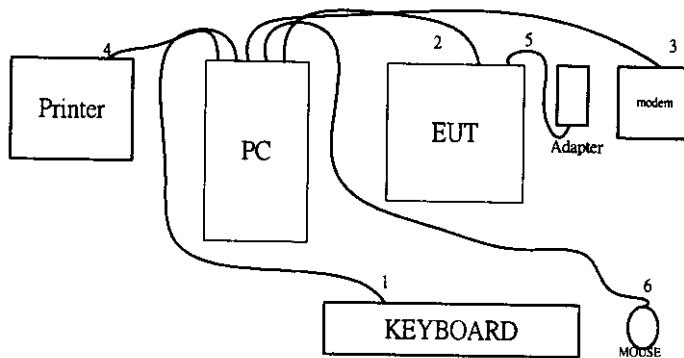
FCC ID	: EMJMUJQ
Model No.	: MUS9J
Serial No.	: SP0045
Data Cable	: Shielded, 360 degree via metal backshells, 1.7m

FCC TEST REPORT**Report No. : F962204****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, 360 degree via metal backshells, 1.35m

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, 1.15m

2.3. Connection Diagram of Test System

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

3. Test Software

An executive program, WINFCC.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, 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.

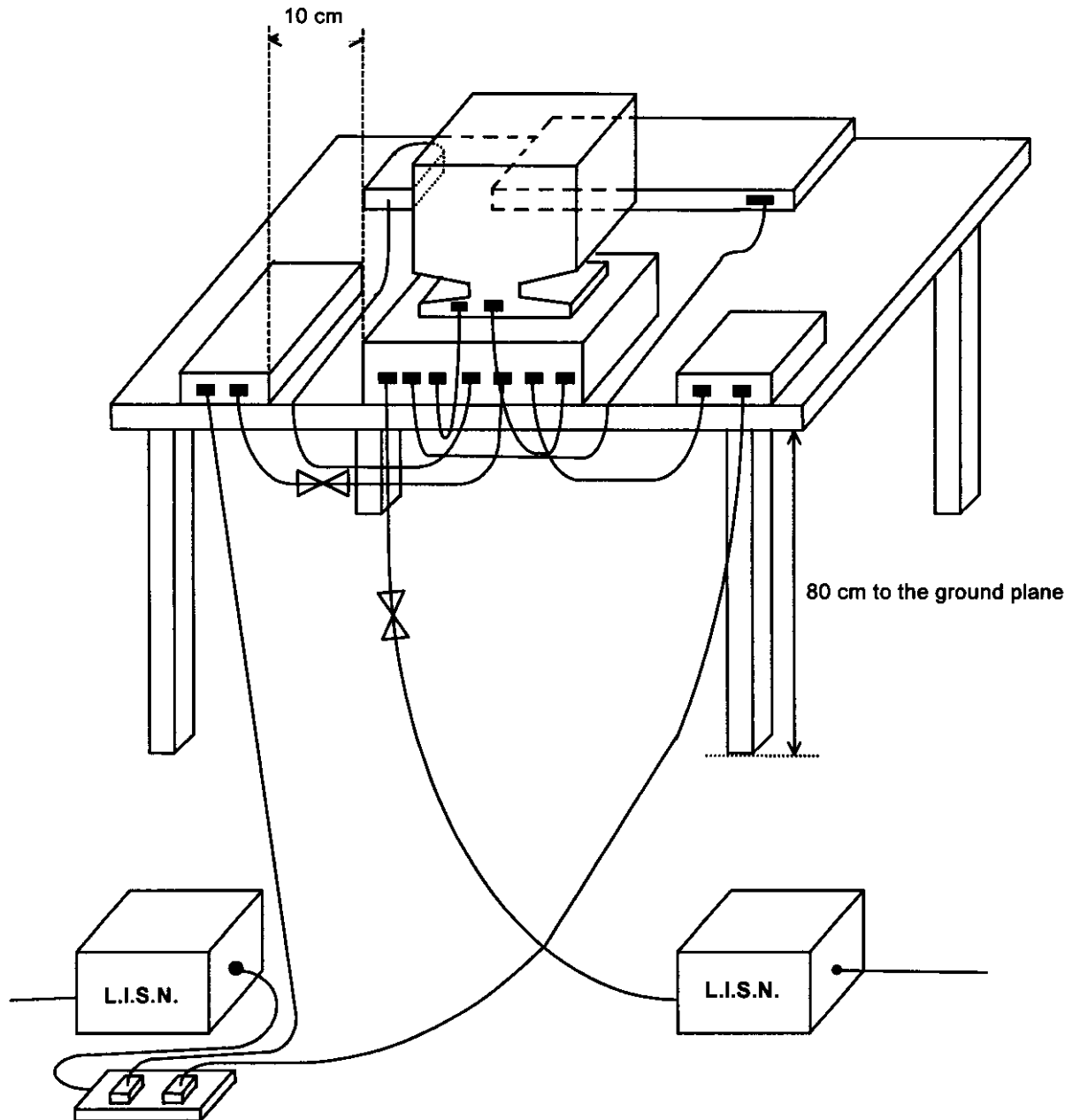
5.1. Major Measuring Instruments

Test Receiver	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

- Frequency Range of Test : from 0.15 MHz to 30 MHz
- Temperature : 26°C
- Relative Humidity : 50 %
- Test Mode : 1024x768 48K
- Test Date : Jun. 28, 1999

The Conducted Emission test was passed at minimum margin

LINE 4.216 MHz / 46.50 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)
0.685	L	40.00	38.80	100.00	87.10	56.00	46.00	630.96	199.53	-16.00	-7.20
4.216	L	46.50	40.90	211.35	110.92	56.00	46.00	630.96	199.53	-9.50	-5.10
4.671	L	46.50	39.20	211.35	91.20	56.00	46.00	630.96	199.53	-9.50	-6.80
1.138	N	40.60	37.00	107.15	70.79	56.00	46.00	630.96	199.53	-15.40	-9.00
4.038	N	46.00	40.70	199.53	108.39	56.00	46.00	630.96	199.53	-10.00	-5.30
5.233	N	46.10	42.20	201.84	128.82	60.00	50.00	1000.00	316.23	-13.90	-7.80

Test Engineer : Benson Tsai
BENSON TSAI

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.

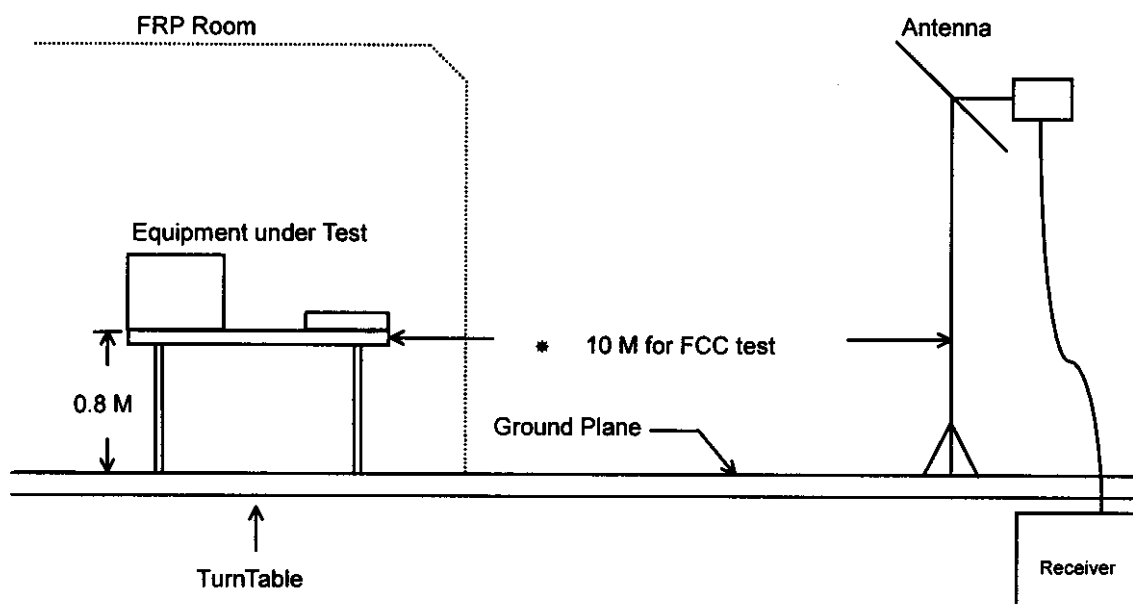
6.1. Major Measuring Instruments

RF Preselector	(HP 85685A)
Attenuation	0 dB
RF Gain	20 dB
Signal Input	20 MHz to 1.5 GHz
Spectrum Analyzer	(HP 8568B)
Attenuation	0 dB
Start Frequency	30 MHz
Stop Frequency	1,000 MHz
Resolution Bandwidth	1 MHz
Video Bandwidth	1 MHz
Signal Input	100 Hz to 1.5 GHz
Quasi-Peak Adapter	(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

- Frequency Range of Test : from 30 MHz to 1,000 MHz
- Test Distance : 10 M
- Temperature : 28°C
- Relative Humidity : 48 %
- Test Mode : 1024x768 48K
- Test Date : Jun. 28, 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

325.71 MHz / 35.00 dBuV (VERTICAL) Antenna Height 1 Meter, Turntable Degree 180 °.

Frequency	Antenna	Cable	Reading		Limits	Emission	Level	Margin	
Polarity	Factor	Loss							
(MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(uV/m)	(dBuV/m)	(uV/m)	(dB)	
521.41	H	18.41	3.17	11.91	37.00	71	33.49	47.26	-3.51
228.00	V	11.20	2.12	14.60	30.00	32	27.92	24.89	-2.08
325.71	V	13.92	2.41	18.67	37.00	71	35.00	56.23	-2.00
342.02	V	14.34	2.54	17.00	37.00	71	33.88	49.43	-3.12
358.40	V	14.70	2.60	16.30	37.00	71	33.60	47.86	-3.40
587.26	V	19.06	3.11	11.10	37.00	71	33.27	46.08	-3.73

Test Engineer : Benson Tsai
 BENSON TSAI

7. Antenna Factor & Cable Loss

Frequency (Mhz)	Antenna Factor (dB)	Cable Loss (dB)
30	17.2	0.7
35	16.2	0.8
40	13.0	0.8
45	10.5	0.9
50	7.0	0.9
55	6.2	1.0
60	5.3	1.0
65	5.2	1.0
70	5.2	1.1
75	5.9	1.2
80	6.8	1.1
85	7.9	1.2
90	9.0	1.3
95	9.8	1.2
100	10.6	1.2
110	11.5	1.4
120	12.3	1.4
130	10.9	1.5
140	10.5	1.6
150	10.5	1.7
160	9.6	1.8
170	9.6	2.0
180	9.7	2.2
190	9.5	2.2
200	9.4	2.0
220	10.7	2.2
240	12.0	2.0
260	12.8	2.2
280	13.0	2.3
300	13.3	2.3
320	13.8	2.4
340	14.3	2.5
360	14.7	2.6
380	15.1	2.6
400	15.5	2.5
450	16.7	2.7
500	17.8	3.0
550	19.2	3.4
600	19.0	3.0
650	18.7	3.2
700	18.5	3.2
750	18.5	3.6
800	16.8	3.5
850	17.0	3.8
900	19.0	4.5
950	19.9	3.8
1000	20.4	5.1

8. List of Measuring Equipments Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum	HP	8591EM	3801H01325	9 KHz – 1.8 GHz	Jun. 29, 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
RF Preselector	HP	85685A	2926A00951	20Hz -1.5GHz	Apr. 19, 1999	Radiation
Spectrum Analyzer (site 1)	HP	8568B	2928A04713	100Hz – 1.5GHz	Apr. 19, 1999	Radiation
Quasi-peak Adapter (site 1)	HP	85650A	2811A01285	9KHz – 1GHz	Apr. 19, 1999	Radiation
Bilog Antenna (site 1)	CHASE	CBL6112A	2302	30MHz - 2GHz	Jan. 29, 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**

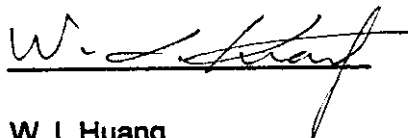
Model No. : **P2L97**

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