FCC ID: LXH-P0005-U

EMC

TEST REPORT

REPORT NO. : F88092004
MODEL NO. : Prime Film 1800U
DATE OF TEST : Oct. 4, 1999

PREPARED FOR : PACIFIC IMAGE ELECTRONICS CO., LTD.

ADDRESS : 10F, NO. 81, HSIN TAI WU 5th RD., SEC. 1,
HSI CHIH, DISTRICT TAIPEI HSIEN,
TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION

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11F, NO.1, SEC.4, NAN-KING EAST RD.,
TAIPEI, TAIWAN, R.O.C.

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TABLE OF CONTENTS

1. CERTIFICATION

Issue Date: Oct. 5, 1999

Product	:	SCANNER
Trade Name	:	PACIFIC IMAGE
Model No.	:	Prime Film 1800U
Applicant	:	PACIFIC IMAGE ELECTRONICS CO., LTD.
Standard	:	FCC Part 15, Subpart B, Class B
		CISPR 22: 1993+A1: 1995+A2: 1996, Class B
		ANSI C63.4-1992

We hereby certify that one sample of the designation has been tested in our facility on Oct. 4, 1999. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class B limits of conducted and radiated emission of applicable standards.

TESTED BY: Kevin Pan , DATE: 10/5/'99
(Kevin Pan)

CHECKED BY: Ariel Hsieh , DATE: 10/5/'99
(Ariel Hsieh)

APPROVED BY: Mike Su , DATE: 10/5/'99
(Mike Su)

ADVANCE DATA TECHNOLOGY CORPORATION

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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	SCANNER
Model No.	:	Prime Film 1800U
Power Supply Type	:	Switching (from power adapter)
Power Cord of adapter	:	Nonshielded DC (1.8 m, 2-pin)
USB Data Cable	:	Shielded (1.8 m)

Note: The EUT is a color film scanner designed for USB port, high speed, high resolution, quality scanning of film.

The EUT was tested with two kinds of power adapters as following:

MODE		**MODE 1**	**MODE 2**
BRAND		HITRON	DVE
MODEL		HES10-12010-0-1	DSA-0151A-12 S
RATING	I/P	100-240Vac, 0.33-0.19A, 50-60 Hz	100-120Vac, 0.4A, 50-60 Hz
	O/P	12Vdc, 1.0A	12Vdc, 1.25A
Note: There is a ferrite core on the DC output cable of HITRON adapter.			

Both data of the above are recorded separately as MODE 1 & 2 in this report.

For more detailed features description, please refer to manufacturer's specification or User's Manual.

2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

No.	Product	Brand	Model No.	FCC ID	I/O Cable
1.	PERSONAL COMPUTER	NTI	PII-233T	FCC DoC Approved	Nonshielded Power (1.8 m)
2.	MONITOR	ADI	937G	BR8937G	Shielded Signal (1.5 m) Nonshielded Power (1.8 m)
3.	KEYBOARD	FORWARD	FDA-104GA	F4ZDA-104G	Shielded Signal (1.4 m)
4.	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded Signal (1.5 m)
5.	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (1.2 m) Nonshielded Power (1.2 m)
6.	MODEM	ACEEX	1414	IFAXDM1414	Shielded Signal (1.2 m) Nonshielded Power (1.2 m)
7.	VGA CARD	CARDEX	CD-GX2A44T	ICUVGA-GW710	NA

2.3 TEST METHODOLOGY AND CONFIGURATION

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4: 1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site.

Please refer to the photos of test configuration in Item 5.

3. TEST INSTRUMENTS

3.1 TEST INSTRUMENTS (EMISSION)

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESHS30	828109/007	July 13, 2000
ROHDE & SCHWARZ Artificial Mains Network	ESH2-Z5	892107/003	July 13, 2000
EMCO L.I.S.N.	3825/2	9504-2359	July 13, 2000
Shielded Room	Site 3	ADT-C03	NA

Note: 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMAS document NIS81.

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
HP Spectrum Analyzer	8594E	3520A01861	Feb. 08, 2000
HP Preamplifier	8447D	2944A08118	Dec. 28, 1999
HP Preamplifier	8347A	3307A01088	Aug. 30, 2000
ROHDE & SCHWARZ TEST RECEIVER	ESVS 10	840241/010	Sept. 9, 2000
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 25, 1999
CHASE BILOG Antenna	CBL6111A	1079	July 17, 2000
EMCO Double Ridged Guide Antenna	3115	9312-4192	April 5, 2000
CHANCE Turn Table	U200	9701	NA
CHANCE Tower	AT-100	CM-A003	NA
Open Field Test Site	Site 3	ADT-R03	July 16, 2000

Note: 1. The measurement uncertainty is less than +/- 3.0dB, which is calculated as per NAMAS document NIS81.

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m) * dBuV/m	Class B (at 10m) * dBuV/m
30 - 230	40	30
230 - 1000	47	37

* Detector Function: Quasi-Peak

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	Peak	Average	Peak	Average
Above 1000	80.0	60.0	74.0	54.0

Note: (1) The lower limit shall apply at the transition frequencies.
(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).
(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

LIMIT OF CONDUCTED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz
(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range	:	0.15 - 30 MHz (Conducted Emission)
		30 - 1000 MHz (Radiated Emission)
Input Voltage	:	120 Vac, 60 Hz
Temperature	:	23 degree C
Humidity	:	68 %
Atmospheric Pressure	:	994 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -2.0 dB at 0.154 MHz Minimum passing margin of radiated emission: -2.1 dB at 216.03 MHz

4.2 EUT OPERATION CONDITION

1. Turn on the power of all equipment.
2. PC runs a test program to enable all functions.
3. Scanner (EUT) scans an image and sends the message to PC.
4. PC then sends the message to monitor and monitor displays it on screen.
5. Repeat steps 3-5.

4.3 TEST DATA OF CONDUCTED EMISSION (A)

EUT: **SCANNER** MODEL: **Prime Film 1800U**

MODE: **1**

PHASE: LINE (L) 6 dB Bandwidth: 10 kHz

Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.154	0.2	60.2	51.5	60.4	51.7	65.8	55.8	-5.4	-4.1
0.203	0.2	50.2	-	50.4	-	63.5	53.5	-13.1	-
0.257	0.2	46.7	-	46.9	-	61.5	51.5	-14.6	-
0.360	0.2	38.2	-	38.4	-	58.7	48.7	-20.3	-
1.977	0.3	32.4	-	32.7	-	56.0	46.0	-23.3	-
6.367	0.5	35.5	-	36.0	-	60.0	50.0	-24.0	-

Remarks:
1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value
6. Emission Level = Correction Factor + Reading Value.

TEST DATA OF CONDUCTED EMISSION (A)

EUT: **SCANNER** MODEL: **Prime Film 1800U**

MODE: **1**

PHASE: NEUTRAL (N) 6 dB Bandwidth: 10 kHz

Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.154	0.2	62.7	53.6	62.9	53.8	65.8	55.8	-2.9	-2.0
0.203	0.2	51.4	-	51.6	-	63.5	53.5	-11.9	-
0.257	0.2	47.7	-	47.9	-	61.5	51.5	-13.6	-
0.360	0.2	40.1	-	40.3	-	58.7	48.7	-18.4	-
1.977	0.3	30.1	-	30.4	-	56.0	46.0	-25.6	-
6.367	0.4	33.7	-	34.1	-	60.0	50.0	-25.9	-

Remarks:
1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value
6. Emission Level = Correction Factor + Reading Value.

4.4 TEST DATA OF CONDUCTED EMISSION (B)

EUT: **SCANNER** MODEL: **Prime Film 1800U**

MODE: **2**

PHASE: LINE (L) 6 dB Bandwidth: 10 kHz

Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.160	0.2	58.2	40.9	58.4	41.1	65.5	55.5	-7.1	-14.4
0.189	0.2	54.3	40.5	54.5	40.7	64.1	54.1	-9.6	-13.4
0.258	0.2	43.9	-	44.1	-	61.5	51.5	-17.4	-
0.762	0.3	39.5	-	39.8	-	56.0	46.0	-16.2	-
1.734	0.3	39.3	-	39.6	-	56.0	46.0	-16.4	-
2.943	0.3	41.8	-	42.1	-	56.0	46.0	-13.9	-

Remarks:
1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value
6. Emission Level = Correction Factor + Reading Value.

TEST DATA OF CONDUCTED EMISSION (B)

EUT: **SCANNER** MODEL: **Prime Film 1800U**

MODE: **2**

PHASE: NEUTRAL (N) 6 dB Bandwidth: 10 kHz

Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.160	0.2	58.7	41.5	58.9	41.7	65.5	55.5	-6.6	-13.8
0.189	0.2	55.2	41.8	55.4	42.0	64.1	54.1	-8.7	-12.1
0.258	0.2	43.9	-	44.1	-	61.5	51.5	-17.4	-
0.762	0.3	41.3	-	41.6	-	56.0	46.0	-14.4	-
1.734	0.3	40.2	-	40.5	-	56.0	46.0	-15.5	-
2.943	0.3	39.5	-	39.8	-	56.0	46.0	-16.2	-

Remarks:
1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value
6. Emission Level = Correction Factor + Reading Value.

4.5 TEST DATA OF RADIATED EMISSION (A)

EUT: **SCANNER** MODEL: **Prime Film 1800U**

MODE: **1** ANT. POLARITY: Horizontal

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
72.00	6.9	7.8	14.7	30.0	-15.3	400	25
144.02	13.2	10.7	23.9	30.0	-6.1	400	295
180.00	11.1	12.3	23.4	30.0	-6.6	400	0
192.02	11.4	11.6	23.0	30.0	-7.0	400	287
264.02	14.4	15.4	29.8	37.0	-7.2	400	171
312.03	15.7	12.6	28.3	37.0	-8.7	269	306
324.02	16.1	15.6	31.7	37.0	-5.3	240	256
504.03	21.2	8.2	29.4	37.0	-7.6	196	150
552.03	22.5	11.3	33.8	37.0	-3.2	180	273
576.03	22.8	10.4	33.2	37.0	-3.8	132	266

REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

TEST DATA OF RADIATED EMISSION (A)

EUT: **SCANNER** MODEL: **Prime Film 1800U**

MODE: **1** ANT. POLARITY: Vertical

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
72.02	6.9	15.1	22.0	30.0	-8.0	181	135
144.03	13.2	8.0	21.2	30.0	-8.8	100	219
180.01	11.1	11.0	22.1	30.0	-7.9	100	349
192.02	11.4	14.3	25.7	30.0	-4.3	100	55
228.02	13.1	6.9	20.0	30.0	-10.0	100	348
252.02	14.2	14.0	28.2	37.0	-8.8	100	0
264.03	14.4	16.1	30.5	37.0	-6.5	100	322
276.02	14.9	9.4	24.3	37.0	-12.7	100	77
360.02	17.4	8.6	26.0	37.0	-11.0	100	217
720.19	25.1	8.0	33.1	37.0	-3.9	400	185

REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

4.6 TEST DATA OF RADIATED EMISSION (B)

EUT: **SCANNER** MODEL: **Prime Film 1800U**

MODE: **2** ANT. POLARITY: Horizontal

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
72.10	6.9	16.1	23.0	30.0	-7.0	400	138
120.02	12.6	9.7	22.3	30.0	-7.7	400	274
168.01	11.7	15.5	27.2	30.0	-2.8	400	220
180.02	11.1	15.2	26.3	30.0	-3.7	400	94
192.02	11.4	14.1	25.5	30.0	-4.5	400	102
204.02	11.9	13.5	25.4	30.0	-4.6	400	99
216.03	12.5	15.4	27.9	30.0	-2.1	400	77
228.00	13.1	13.6	26.7	30.0	-3.3	400	270
240.03	13.7	17.5	31.2	37.0	-5.8	400	81
264.03	14.4	12.4	26.8	37.0	-10.2	400	247
324.00	16.1	17.2	33.3	37.0	-3.7	264	282
720.19	25.1	4.8	29.9	37.0	-7.1	237	50
768.04	25.7	8.4	34.1	37.0	-2.9	228	189

REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

TEST DATA OF RADIATED EMISSION (B)

EUT: **SCANNER** MODEL: **Prime Film 1800U**

MODE: **2** ANT. POLARITY: Vertical

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

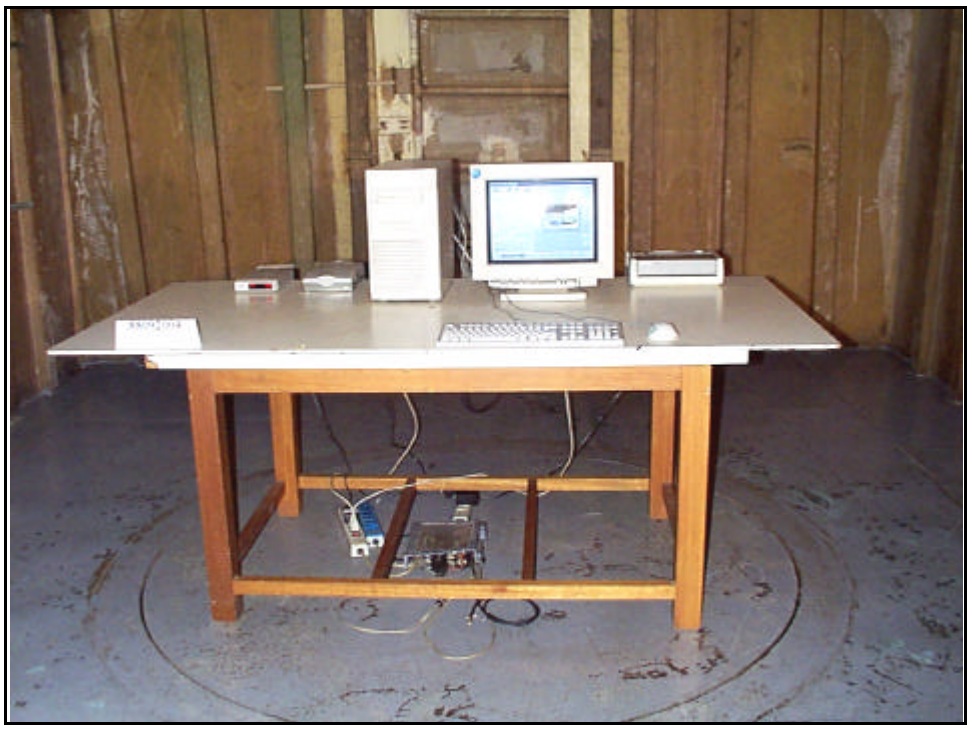
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
72.58	7.0	20.8	27.8	30.0	-2.2	186	92
120.02	12.6	15.0	27.6	30.0	-2.4	100	107
168.02	11.7	13.8	25.5	30.0	-4.5	100	151
180.02	11.1	15.1	26.2	30.0	-3.8	100	4
192.01	11.4	15.5	26.9	30.0	-3.1	100	16
204.01	11.9	14.0	25.9	30.0	-4.1	100	23
216.04	12.5	15.1	27.6	30.0	-2.4	100	7
228.04	13.1	12.1	25.2	30.0	-4.8	100	57
240.06	13.7	20.2	33.9	37.0	-3.1	100	53
264.05	14.4	18.1	32.5	37.0	-4.5	100	47
312.05	15.7	13.8	29.5	37.0	-7.5	100	282
720.15	25.1	7.4	32.5	37.0	-4.5	392	14
768.03	25.7	8.5	34.2	37.0	-2.8	400	31
912.18	26.3	7.2	33.5	37.0	-3.5	312	9

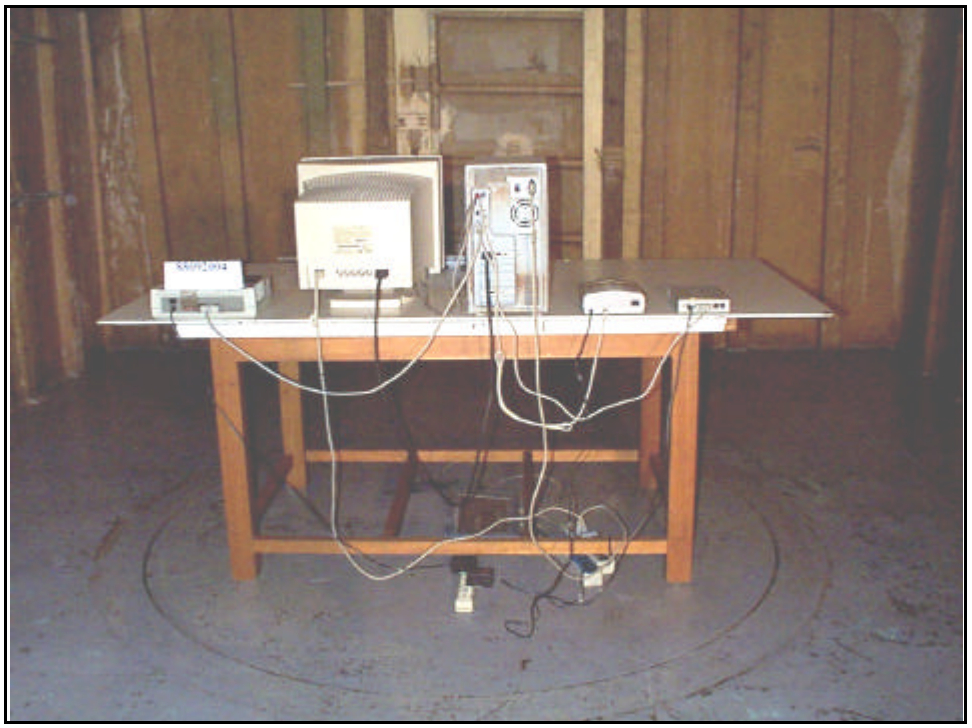
REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH MINIMUM MARGIN

CONDUCTED EMISSION TEST

RADIATED EMISSION TEST





6. APPENDIX - INFORMATION OF THE TESTING LABORATORY

Information of the testing laboratory

We, ADT Corp., is founded in 1988, to provide our best service in EMC and Safety consultation. Our laboratory is accredited by the following approval agencies according to ISO/IEC Guide 25 or EN 45001:

• USA	FCC, UL, NVLAP
• Germany	TUV Rheinland
	TUV Product Service
• Japan	VCCI
• New Zealand	RFS
• Norway	NEMKO, DNV
• U.K.	INCHCAPE
• R.O.C.	BSMI

Enclosed please find some certificates of our laboratory obtained from approval agencies. If you have any comments, please feel free to contact us with the following:

Lin Kou EMC Lab.:
Tel: 886-2-26032180
Fax: 886-2-26022943

Hsin Chu EMC Lab:
Tel: 886-35-935343
Fax: 886-35-935342

Lin Kou Safety Lab.:
Tel: 886-2-26093195
Fax: 886-2-26093184

Design Center:
Tel: 886-2-26093195
Fax: 886-2-26093184

E-mail: **service@mail.adt.com.tw**
http://www.adt.com.tw