

# Certificate of Compliance

We, **ADVANCE DATA TECHNOLOGY CORP.**, hereby certify that:

The product : CPU BOARD

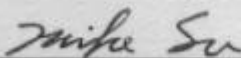
Trade Name : AAEON

Model No. : SBC-558

Applicant : AAEON TECHNOLOGY INC.

one sample of the designation has been tested in our facility from Nov. 15 to Nov. 22, 1999. The test record, data evaluation and Equipment Under Test (EUT) configuration represented in our report No.: **CE88111604**, are in compliance with the following standards:

EN 55022: 1994+A1: 1995+A2: 1997, Class A	EN 50082-2: 1995
	EN 61000-4-2: 1995
	EN 61000-4-3: 1996
	EN 61000-4-4: 1995
	EN 61000-4-6: 1996
	EN 61000-4-8: 1993
	ENV 50204: 1995



Mike Su / Project Manager

Issue Date: Nov. 24, 1999



## ADVANCE DATA TECHNOLOGY CORP.

Head office: 11F, NO. 1, SEC. 4, NAN-KING EAST RD., TAIPEI, TAIWAN, R.O.C.  
TEL: (02) 2603-2180 FAX: (02) 2602-2943 <http://www.adt.com.tw> e-mail: [service@mail.adt.com.tw](mailto:service@mail.adt.com.tw)



# EMC

## TEST REPORT

REPORT NO. : CE88111604  
MODEL NO. : SBC-558  
DATE OF TEST : Nov. 15 ~ Nov.22, 1999

PREPARED FOR: AAEON TECHNOLOGY INC.

ADDRESS : 1F, NO. 6, ALLEY 6, LANE 45, PAO-HSIN RD.,  
HSIN-TIEN CITY, TAIPEI, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

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

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1.

# CERTIFICATION

Issue date: Nov. 24, 1999

Product	:	CPU BOARD	
Trade Name	:	AAEON	
Model No.	:	SBC-558	
Applicant	:	AAEON TECHNOLOGY INC.	
Standard	:	EN 55022: 1994+A1: 1995+A2: 1997, Class A	EN 50082-2: 1995 EN 61000-4-2: 1995 EN 61000-4-3: 1996 EN 61000-4-4: 1995 EN 61000-4-6: 1996 EN 61000-4-8: 1993 ENV 50204: 1995

We hereby certify that one sample of the designation has been tested in our facility from Nov. 15 to Nov. 22, 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.

TESTED BY : Ken Liu , DATE: 11/26/99  
( Emission ) ( Ken Liu )

TESTED BY : Dennis Chuang , DATE: 11/24/99  
( Immunity ) ( Dennis Chuang )

CHECKED BY : Ariel Hsieh , DATE: 11/24/99  
( Ariel Hsieh )

APPROVED BY : Mike Su , DATE: 11/24/99  
( Mike Su )



**ADVANCE DATA TECHNOLOGY CORPORATION** Accredited Laboratory



## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Product : CPU BOARD  
Model No. : SBC-558  
Power Supply : Switching (DC from PC)  
Data Cable : NA

Note: The EUT, which is installed in the industrial PC, was tested with the following configuration:

ITEM	BRAND	MODEL	REMARK
CHASSIS	AAEON	AIPL-314	-
CPU	INTEL	PENTIUM MMX 266	266 MHz
HDD	SEAGATE	ST3630A	-
BLACKPLANE	AAEON	BP-214PAS	-
POWER SUPPLY	BPS	BPS-320A	-

The video resolution of 1024x768 (69 kHz) was used during the test.

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

### 2.2 GENERAL DESCRIPTION OF APPLIED STANDARD

The EUT is a kind of Information Technology Equipment which could be used in industrial area and according to the manufacturer's specifications, it was tested according to the following standards:

EN 55022: 1994 | A1: 1995+A2: 1997, Class A

EN 50082-2: 1995  
EN 61000-4-2: 1995  
EN 61000-4-3: 1996  
EN 61000-4-4: 1995  
EN 61000-4-6: 1996  
EN 61000-4-8: 1993  
ENV 50204: 1995

All tests are performed and recorded as per above standards.



## 2.3 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.

### FOR EMISSION TEST

No	Product	Brand	Model No.	Serial No.	I/O Cable
1.	COLOR MONITOR	HITACHI	CM814U	G8K001804	Shielded Signal (1.5m) Nonshielded Power (1.8m)
2.	KEYBOARD	BTC	5140	765020079	Shielded Signal (1.4m)
3.	USB KEYBOARD	BTC	7932	D7A140017	Shielded Signal (1.8m)
4.	MOUSE	LOGITECH	M-S34	23-037830	Shielded Signal (1.5m)
5.	USB MOUSE	DEXIN	A2U800A	71001830	Shielded Signal (1.5m)
6.	PRINTER	HP	2225C+	3123S97230	Shielded Signal (1.2m) Nonshielded Power (1.2m)
7.	MODEM	ACEEX	1414	980020531	Shielded Signal (1.2m) Nonshielded Power (1.2m)
8.	MODEM	ACEEX	1414	980020504	Shielded Signal (1.2m) Nonshielded Power (1.2m)
9.	PC	IBM	2156-D1N	BNA2561	Nonshielded power (1.8m)
10.	MONITOR	ADI	SM-5514A	S218930301A	Shielded Signal (1.5m) Nonshielded Power (1.8m)
11.	KEYBOARD	FORWARD	FDA-104GA	FDEB8110117	Shielded Signal (1.4m)
12.	MOUSE	LOGITECH	M-S2B-6MP	LTN51301838	Shielded Signal (1.5m)
13.	LAN CARD	ACER	6311	K6357051088	NA

Note: 1. Support units 3 & 5 were connected to the USB ports of PC.

2. Support units 1-8 acted as SERVER PC and communicated with support units 9-13, which acted as WORKSTATION and systems of communication partner via a UTP cable (10m).



### FOR IMMUNITY TEST

No	Product	Brand	Model No.	Serial No.	I/O Cable
1.	COLOR MONITOR	ACER	7234e	9174302003	Shielded Signal (1.5m) Nonshielded Power (1.8m)
2.	KEYBOARD	BTC	5140	75B110606	Shielded Signal (1.5m)
3.	USB KEYBOARD	ACER	6512-BU	NA	Shielded Signal (2.9m)
4.	MOUSE	HP	M-S34	LZA2556273	Shielded Signal (1.8m)
5.	USB MOUSE	FORWARD	FDM-F50	90801059	Shielded Signal (1.8m)
6.	PRINTER	HP	C2145A	SG59N16035	Shielded Signal (1.5m) Nonshielded Power (1.8m)
7.	MODEM	GVC	F-1114V/R6	853E100	Shielded Signal (1.25m) Nonshielded Power (1.5m)
8.	MODEM	GVC	F-1128V1R6	96-191-113004	Shielded Signal (1.25m) Nonshielded Power (1.5m)
9.	NOTEBOOK PC	UNI	UNI-812	97207-0112-02 9850	Nonshielded power (1.8m)
10.	LAN CARD	3COM	3CCFB575BT	GTW15D5530	NA

Note: 1. Support units 3 & 5 were connected to the USB ports of PC.

2. Support units 1-8 acted as SERVER PC and communicated with support units 9-10, which acted as WORKSTATION and systems of communication partner via a UTP cable (10m).

## 2.4 TEST SETUP

Please refer to the photos of test configuration in Item 6.



### 3. TEST INSTRUMENTS

#### 3.1 TEST INSTRUMENTS (EMISSION)

##### CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESHS30	828765/002	Aug. 2, 2000
ROHDE & SCHWARZ Artificial Mains Network	ESH2-Z5	828075/003	July 21, 2000
EMCO-L.I.S.N. Shielded Room	3825/2 Site 5	90031627 ADT-C05	July 21, 2000 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	8590L	3544A01176	April 22, 2000
HP Preamplifier	8447D	2944A08485	May 1, 2000
HP Preamplifier	8347A	3307A01088	Aug. 30, 2000
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Aug. 30, 2000
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 25, 1999
CHASE BILOG Antenna	CBI.6112A	2221	Aug. 4, 2000
EMCO Turn Table	1060	1115	NA
SHOSHIN Tower	AP-4701	A6Y005	NA
Open Field Test Site	Site 5	ADT-R05	July 30, 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 TEST INSTRUMENTS (IMMUNITY)

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
KeyTek, ESD Test System	2000	9105240/41	Aug. 10, 2000
KeyTek, ESD Simulator	MZ-15/EC	92022232	April 14, 2000
KeyTek, EFT Generator	CE-40	9508257	Sept. 5, 2000
KeyTek, Capacitive Clamp	CE-40-CCL	9508259	Sept. 5, 2000
KeyTek, Control Center	E103	9508347	NA
KeyTek, Surge Combination Wave	E501A	9508349	Aug. 30, 2000
KeyTek, Surge Coupler/Decoupler	E551	9508350	Aug. 30, 2000
ROHDE & SCHWARZ Signal Generator	SMY01	840490/009	Aug. 19, 2000
KALMUS Power Amplifier	LA1000V	091995-1	NA
KALMUS Power Amplifier	757LC	091995-2	NA
HOLADAY Field Probe	HI-4422	89915	Aug. 12, 2000
EMCO BiconiLog Antenna	3141	1001	NA
FCC Coupling Decoupling Network	FCC-801-M3-25	48	NA
FCC Coupling Decoupling Network	FCC-801-M2-25	20	NA
FISCHER CUSTOM COMMUNICATIONS EM Injection Clamp	FCC-203I	50	NA
FCC Coupling Decoupling Network	FCC-801-M1-25	17	NA
BOONTON RF Voltage Meter	9200B	331801AE	Dec. 17, 1999
COMTEST Compact Full Anechoic Chamber (7x3x3 m)	CPAC	ADT-S01	Aug. 24, 2000
HAEFELY Magnetic Field Tester	MAG 100.1	083794-06	NA
COMBINOVA Magnetic Field Meter	MFM10	224	Oct. 29, 2000
HAEFELY Mains Interference Simulator	PLINE 1610	083690-17	June 7, 2000

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



### 3.3 LIMITS OF CONDUCTED AND RADIATED EMISSION

#### LIMIT OF RADIATED EMISSION OF EN 55022

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

- 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 EN 55022

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

Product Family Standard	:	EN 55022: 1994+A1: 1995+A2: 1997, Class A
Frequency Range	:	0.15 - 30 MHz (Conducted Emission) 30 - 1000 MHz (Radiated Emission)
Input Voltage	:	230 Vac, 50 Hz (to PC)
Temperature	:	21 °C
Humidity	:	72 %
Atmospheric Pressure	:	1002 mbar

TEST RESULT	Remarks
<b>PASS</b>	Minimum passing margin of conducted emission: -23.8 dB at 0.634 MHz Minimum passing margin of radiated emission: -2.1 dB at 45.50 MHz

### 4.2 EUT OPERATION CONDITION

1. Turn on the power of all equipment.
2. Industrial PC reads a test program to enable all functions.
3. Industrial PC reads and writes messages from FDD and HDD.
4. Industrial PC sends "H" messages to monitor and monitor displays "H" patterns on screen.
5. Industrial PC sends "H" messages to modem.
6. Industrial PC sends "H" messages to printer, and the printer prints them on paper.
7. Repeat steps 2-7.



### 4.3 TEST DATA OF CONDUCTED EMISSION

EUT: CPU BOARD

MODEL: SBC-558

PHASE: LINE (L)

6 dB Bandwidth: 10 kHz

Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.298	0.2	51.1	-	51.3	-	79.0	66.0	-27.7	-
0.634	0.3	44.8	-	45.1	-	73.0	60.0	-27.9	-
3.593	0.4	32.9	-	33.3	-	73.0	60.0	-39.7	-
6.859	0.6	32.1	-	32.7	-	<del>73.0</del>	<del>60.0</del>	-40.3	-
13.007	0.9	45.8	-	46.7	-	73.0	60.0	-26.3	-
19.484	1.3	41.6	-	42.9	-	73.0	60.0	-30.1	-

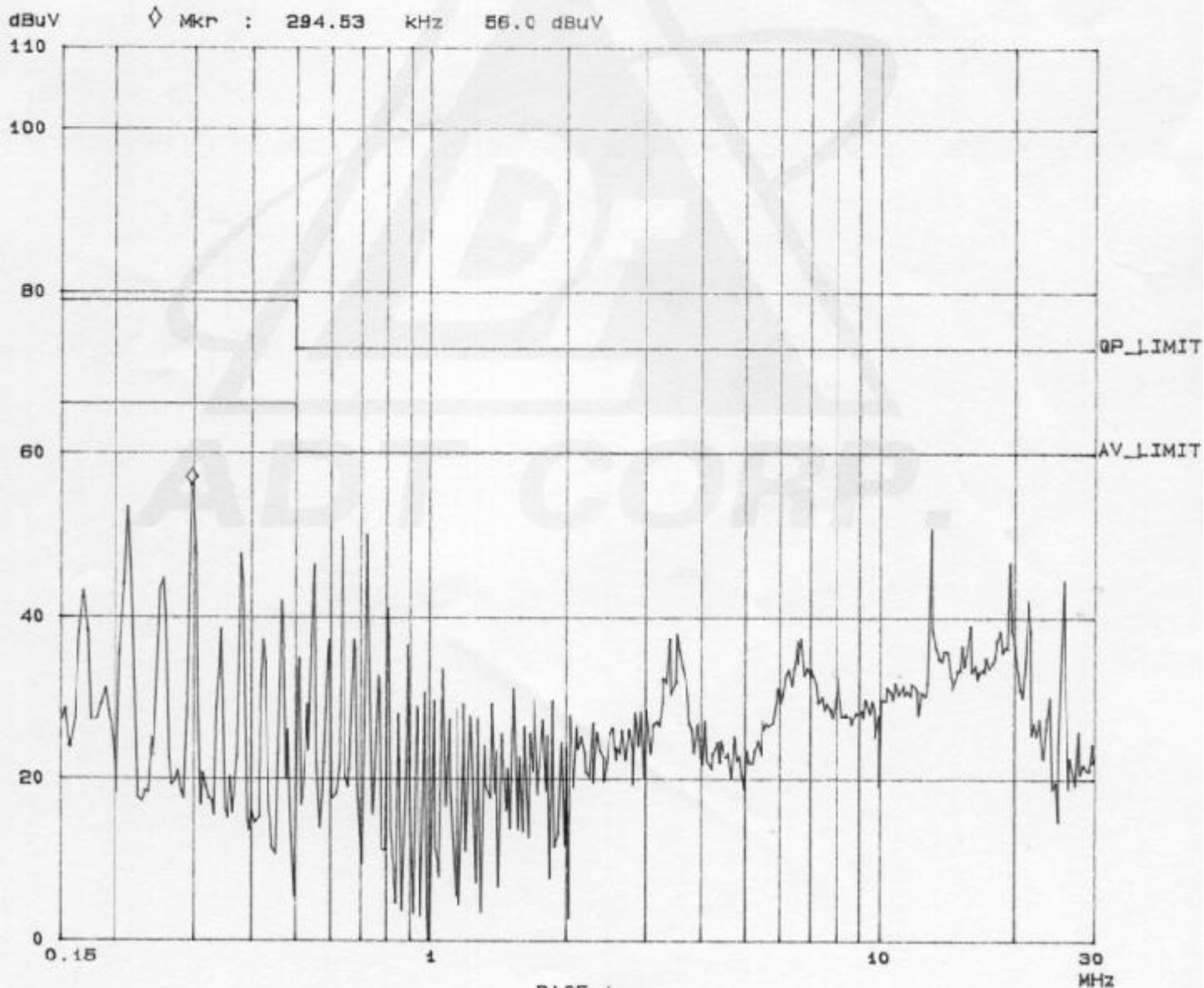
- Remarks:
1. "\*": Undetectable
  2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  3. "-": The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
  4. The emission levels of other frequencies were very low against the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

EUT: SBC-558  
Test Spec: LISN : L  
Comment: FULL SYSTEM  
File name: EN55022A.SPC

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Tested by Ken Liu

Overview Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	1M	3.9k	9k	AV	10ms	10dBLN	OFF
1M	10M	3.9k	9k	AV	0.10ms	10dBLN	OFF
10M	30M	3.9k	9k	AV	0.10ms	10dBLN	OFF





## TEST DATA OF CONDUCTED EMISSION

EUT: CPU BOARD

MODEL: SBC-558

PHASE: NEUTRAL (N)

6 dB Bandwidth: 10 kHz

Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.298	0.2	49.2	-	49.4	-	79.0	66.0	-29.6	-
0.634	0.3	48.9	-	49.2	-	73.0	60.0	-23.8	-
3.593	0.3	35.1	-	35.4	-	73.0	60.0	-37.6	-
6.859	0.5	34.9	-	35.4	-	73.0	60.0	-37.6	-
13.007	0.7	45.0	-	45.7	-	73.0	60.0	-27.3	-
19.484	1.1	43.7	-	44.8	-	73.0	60.0	-28.2	-

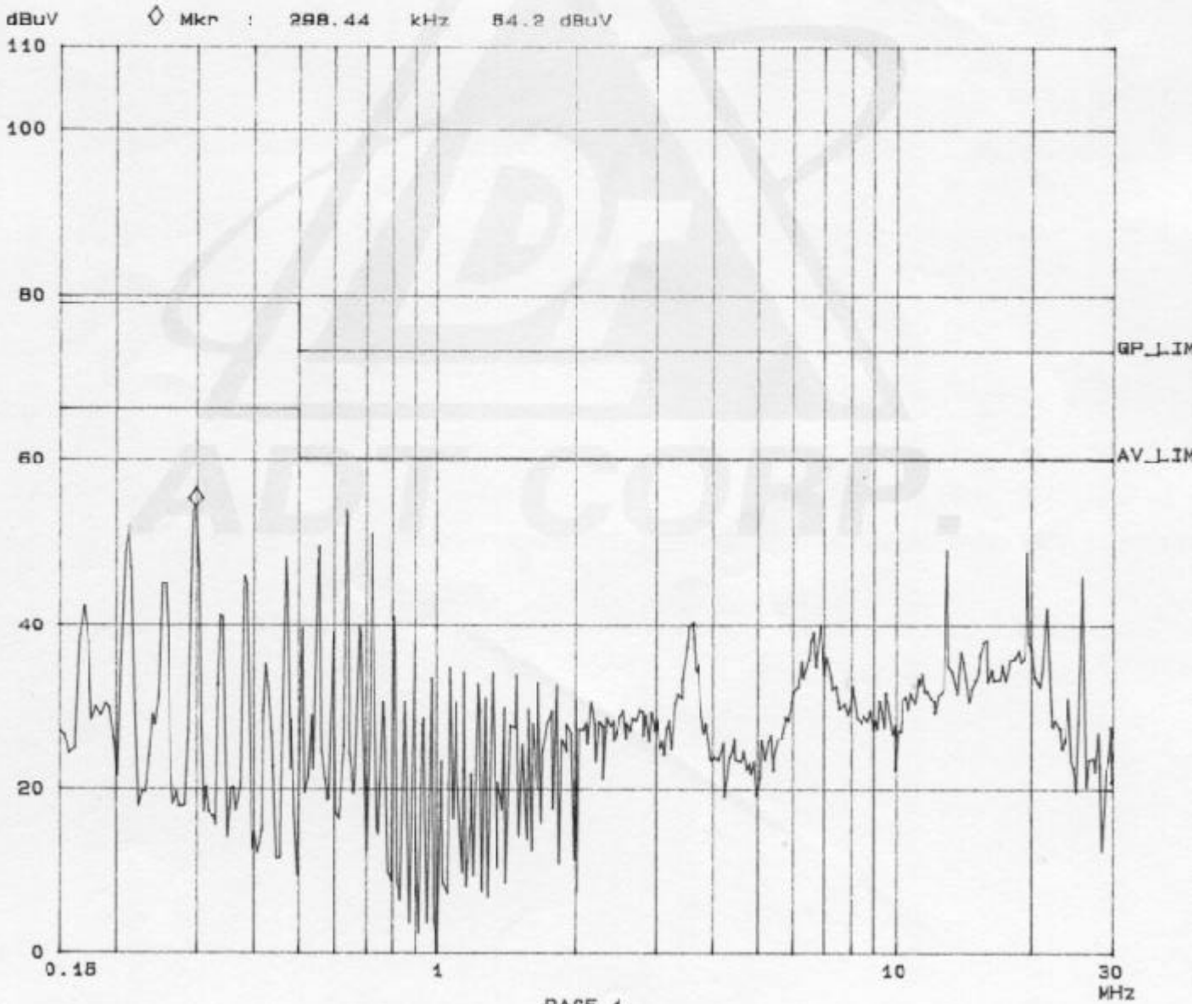
- Remarks:
1. "-": Undetectable
  2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  3. "-": The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
  4. The emission levels of other frequencies were very low against the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

EUT: SBC-558  
Test Spec: LISN : N  
Comment: FULL SYSTEM  
File name: EN55022A.SPC

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Tested by Ken Lin

Overview Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	
150k	1M	3.9k	9k	AV	10ms	10dB LN	OFF	
1M	10M	3.9k	9k	AV	0.10ms	10dB LN	OFF	
10M	30M	3.9k	9k	AV	0.10ms	10dB LN	OFF	





#### 4.4 TEST DATA OF RADIATED EMISSION

EUT: CPU BOARD

MODEL: SBC-558

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)
45.50	10.4	20.6	31.0	40.0	-9.0	340	300
133.65	12.7	8.7	21.4	40.0	-18.6	400	12
142.99	12.5	7.5	20.0	40.0	-20.0	400	180
149.50	12.2	6.5	18.7	40.0	-21.3	400	7
181.96	10.7	12.8	23.5	40.0	-16.5	400	229
200.48	10.2	20.3	30.5	40.0	-9.5	400	260
267.30	14.6	10.2	24.8	47.0	-22.2	400	307
336.07	15.9	19.6	35.5	47.0	-11.5	400	39
400.93	18.0	15.8	33.8	47.0	-13.2	219	248
432.09	18.4	18.1	36.5	47.0	-10.5	266	239
467.77	19.1	19.8	38.9	47.0	-8.1	195	297

- 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

EUT: CPU BOARD

MODEL: SBC-558

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)
45.50	10.4	27.5	37.9	40.0	-2.1	138	263
66.82	6.6	23.1	29.7	40.0	-10.3	236	243
133.65	12.7	22.8	35.5	40.0	-4.5	100	156
142.97	12.5	24.5	37.0	40.0	-3.0	100	78
149.47	12.2	21.5	33.7	40.0	-6.3	100	332
181.96	10.7	19.0	29.7	40.0	-10.3	100	358
200.49	10.2	19.9	30.1	40.0	-9.9	100	358
214.44	11.2	18.9	30.1	40.0	-9.9	100	168
267.29	14.6	21.6	36.2	47.0	-10.8	100	344
279.45	14.7	13.1	27.8	47.0	-19.2	100	332
400.94	18.0	16.2	34.2	47.0	-12.8	400	154
467.76	19.1	18.1	37.2	47.0	-9.8	359	165

- 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. TEST RESULTS (IMMUNITY)

### 5.1 GENERAL DESCRIPTION

Generic Standard	:	EN 50082-2: 1995
Basic Standard and Performance Criteria	:	EN 61000-4-2 (Electrostatic Discharge, ESD, 8kV air discharge, 4kV Contact discharge, Performance Criterion B)
		EN 61000-4-3 (Radio-Frequency Electromagnetic Field Susceptibility Test, RS, 80-1000 MHz, 10V/m, 80% AM (1kHz), Performance Criterion A)
		EN 61000-4-4 (Electrical Fast Transient/Burst, EFT, Power line: 2kV, Signal line: 1kV, Performance Criterion B)
		EN 61000-4-6 (Conducted Radio Frequency Disturbances Test, CS, 0.15-80 MHz, 10V/m, 80% AM, 1kHz, Performance Criterion A)
		EN 61000-4-8 (Power Frequency Magnetic Field Test, 50 Hz, 30A/m, Performance Criterion A)
		ENV 50204 (Radio-Frequency Electromagnetic Field, Pulse modulated, 900+/-5 MHz, 3V/m, 50 % duty cycle, Rep. Frequency 200 Hz, Performance Criterion A)
Input Voltage	:	230 Vac, 50 Hz (to power of Industrial PC)
Temperature	:	20 °C
Humidity	:	54 %
Atmospheric Pressure	:	1000 mbar

### 5.2 PERFORMANCE CRITERIA DESCRIPTION

- Criterion A - The apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.
- Criterion B - The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.
- Criterion C - Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

### 5.3 EUT OPERATION CONDITION

Industrial PC runs a test program to access FDD/HDD/MODEM/PRINTER sequentially and show the result on monitor screen.



## 5.4 TEST RESULT OF ELECTROSTATIC DISCHARGE (ESD)

Basic Standard	:	EN 61000-4-2
Generic Standard	:	EN 50082-2
Discharge Impedance	:	330 ohm / 150 pF
Discharge Voltage	:	Air Discharge - 8 kV (Direct) Contact Discharge - 4 kV (Direct/ Indirect)
Polarity	:	Positive/Negative
Number of Discharge	:	Minimum 10 times at each test point
Discharge Mode	:	Single Discharge
Discharge Period	:	1-second minimum

Test Result		Remarks
Criterion A	Pass	MODEL: SBC-558

### OBSERVATION DESCRIPTION

Direct Application			Test Result	
Discharge Level (kV)	Polarity (+/-)	Test Point	Contact Discharge	Air Discharge
8	+/-	1 ~ 4	NA	Note 1
4	+/-	1 ~ 3	Note 1	NA

#### Description of test point: (Pls. refer to ESD test photo)

- |                  |                 |
|------------------|-----------------|
| 1. All I/O ports | 2. All screws   |
| 3. Metal case    | 4. All openings |

Indirect Application			Test Result	
Discharge Level (kV)	Polarity (+/-)	Test Point	Horizontal Coupling plane	Vertical Coupling plane
4	+/-	1 ~ 4	Note 1	Note 1

#### Description of test point:

- |               |              |
|---------------|--------------|
| 1. Front side | 2. Rear side |
| 3. Right side | 4. Left side |

#### Description of test result:

Note 1: There was no change compared with initial operation during the test.



## 5.5 TEST RESULT OF RADIATED ELECTROMAGNETIC FIELDS (RS)

Basic Standard : EN 61000-4-3  
Generic Standard : EN 50082-2  
Frequency range : 80 MHz - 1000 MHz  
Field strength : 10 V/m  
Modulation : 1kHz Sine Wave, 80%, AM Modulation  
Dwell Time : 3 seconds  
Frequency step : 1 % of fundamental  
Polarity of Antenna : Horizontal and Vertical  
Test distance : 3 m

Test Result		Remarks
Criterion A	Pass	MODEL: SBC-558

Note: Four sides of EUT are verified separately.

### OBSERVATION DESCRIPTION

There is no change compared with initial operation during the test.



## 5.6 TEST RESULT OF ELECTRICAL FAST TRANSIENT/BURST (EFT/BURST)

Basic Standard : EN 61000-4-4  
Generic Standard : EN 50082-2  
Test Voltage : Power Line - 2 kV (to power of Industrial PC)  
Signal/Control Line - 1kV  
Polarity : Positive/Negative  
Impulse Frequency : 5 kHz  
Tr / Tn : 5/50 ns  
Burst Duration : 15 ms  
Burst Period : 300 ms  
Test Duration : Not less than 1 min.

Test Result		Remarks
Criterion A	Pass	MODEL: SBC-558

### OBSERVATION DESCRIPTION

Test Point	Polarity	Test Level (kV)	Result
L1	+/-	2	Note 1
L2	+/-	2	Note 1
GND	+/-	2	Note 1
Signal / Control Line	+/-	1	Note 1

#### Description of test result:

Note 1: There was no change compared to initial operation during the test.



## 5.7 TEST RESULT OF CONDUCTED RADIO FREQUENCY DISTURBANCES (CS)

Basic Standard : EN 61000-4-6  
Generic Standard : EN 50082-2  
Frequency range : 0.15 MHz - 80 MHz  
Field strength : 10 V/m  
Modulation : 1kHz Sine Wave, 80%, AM Modulation  
Frequency step : 1 % of fundamental  
Coupled cable : Power Mains, Unshielded  
Coupling device : CDN-M3 (3 wires), Clamp

Test Result	Remarks
Criterion A	MODEL: SBC-558

### OBSERVATION DESCRIPTION

There is no change compared with initial operation during the test.



## 5.8 TEST RESULT OF POWER FREQUENCY MAGNETIC FIELD

Basic Standard : EN 61000-4-8  
Generic Standard : EN 50082-2  
Frequency range : 50 Hz  
Field strength : 30 A/m  
Observation Time : 1 minute  
Inductance coil : Rectangular type, 1mx1m

Test Result		Remarks
Criterion A	Pass	MODEL: SBC-558

### OBSERVATION DESCRIPTION

There was no change compared with initial operation during the test.



## 5.9 TEST RESULT OF RADIO-FREQUENCY ELECTROMAGNETIC FIELD, PULSE MODULATED

Basic Standard : ENV 50204  
Generic Standard : EN 50082-2  
Frequency range : 900 +/- 5 MHz  
Field strength : 10 V/m  
Modulation : 200Hz, Square Wave, 50% Duty Cycle  
Dwell Time : 30 second  
Polarity of Antenna : Horizontal and Vertical  
Test distance : 3 m

Test Result	Remarks
Criterion A : <b>PASS</b>	MODEL: SBC-558

Note: Four sides of EUT are verified separately.

### OBSERVATION DESCRIPTION

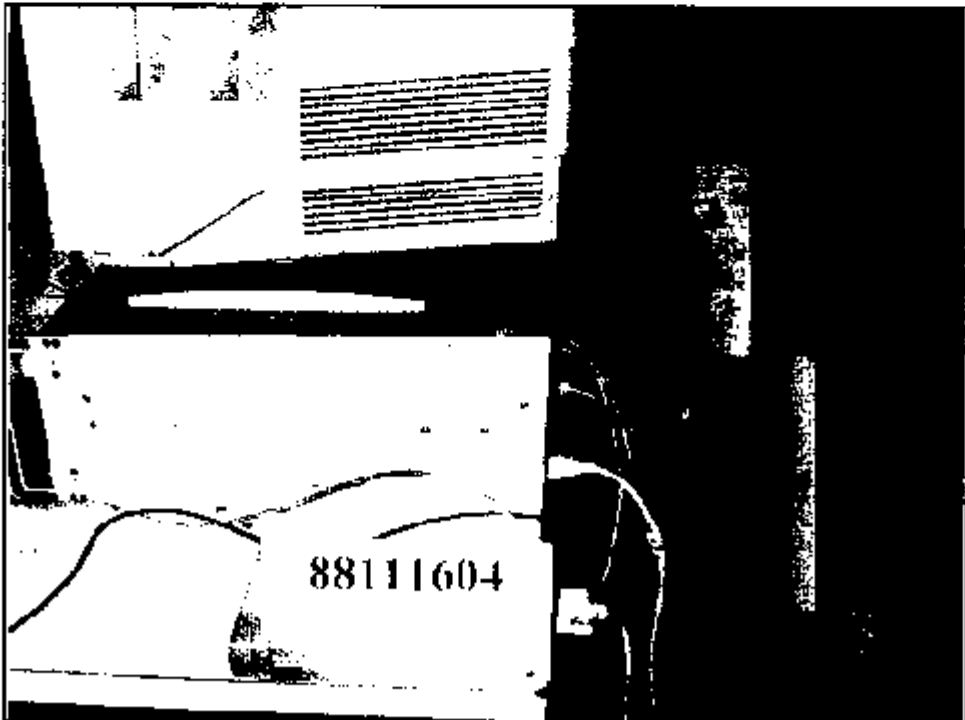
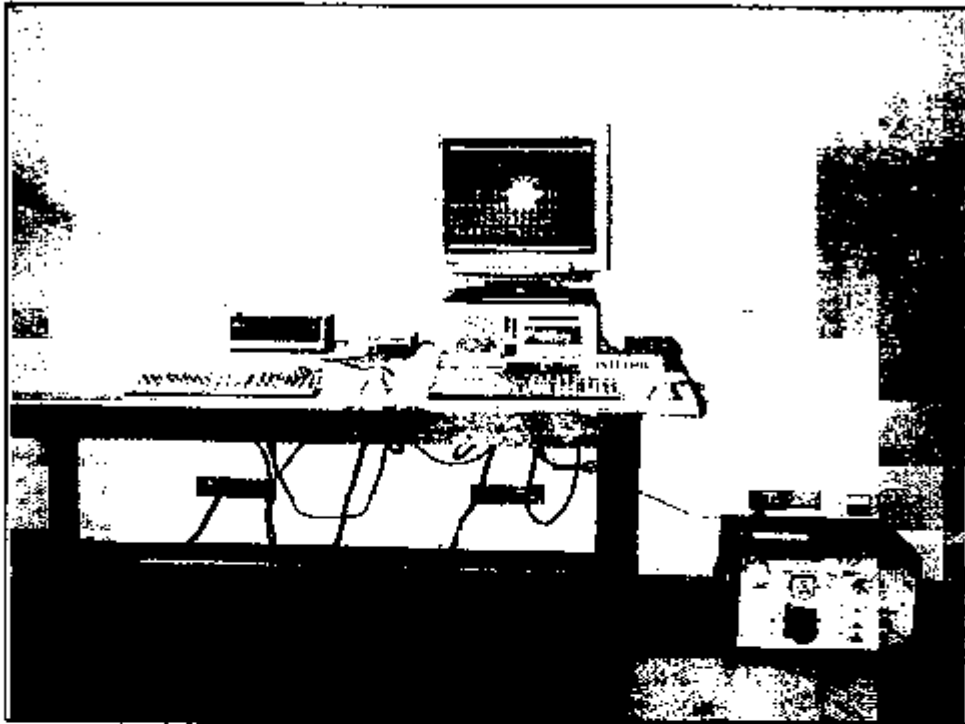
There is no change compared with initial operation during the test.





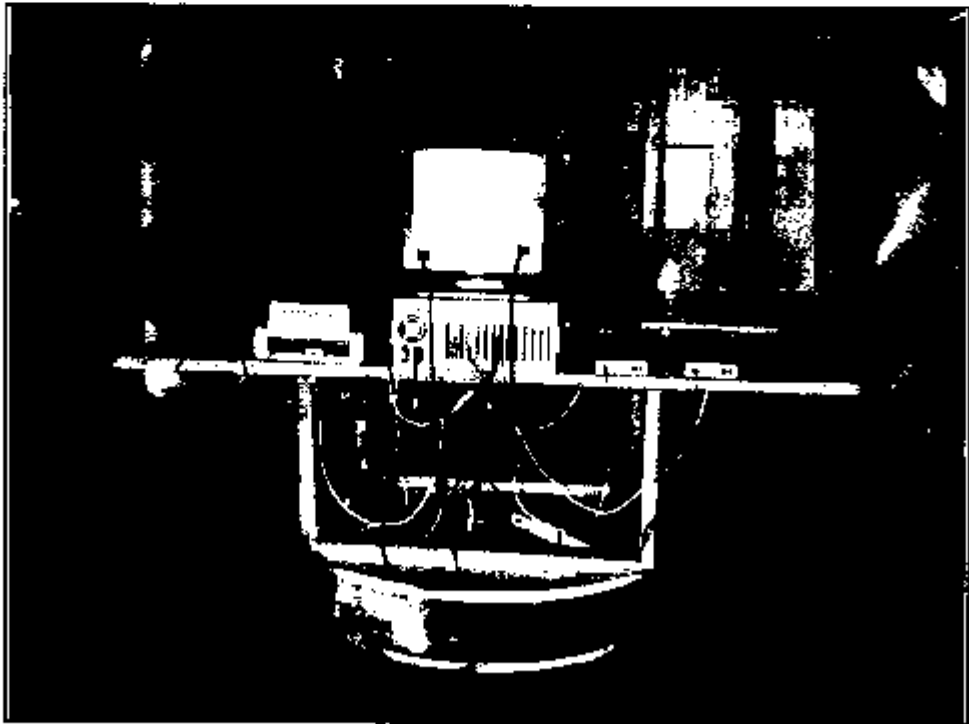
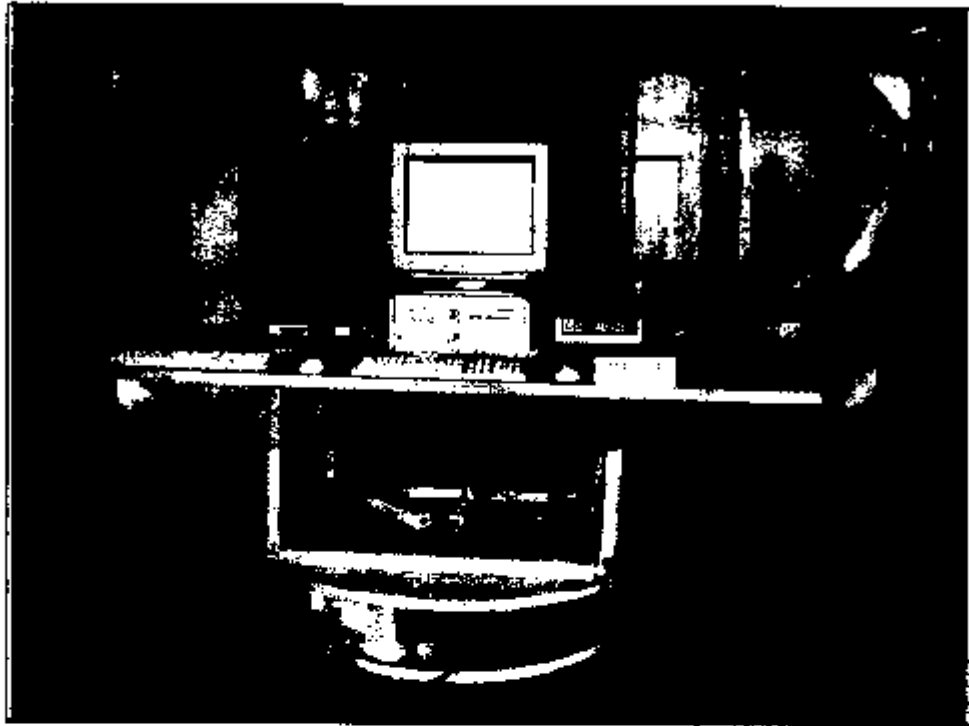
## 6. PHOTOGRAPHS OF THE TEST CONFIGURATION

### CONDUCTED EMISSION TEST



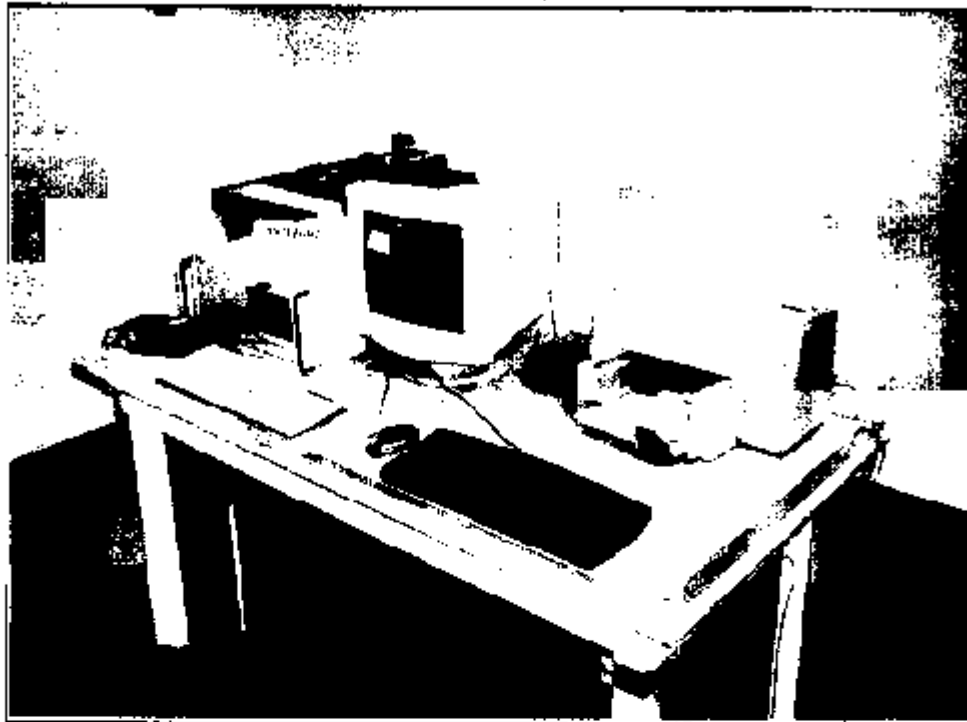


## RADIATED EMISSION TEST

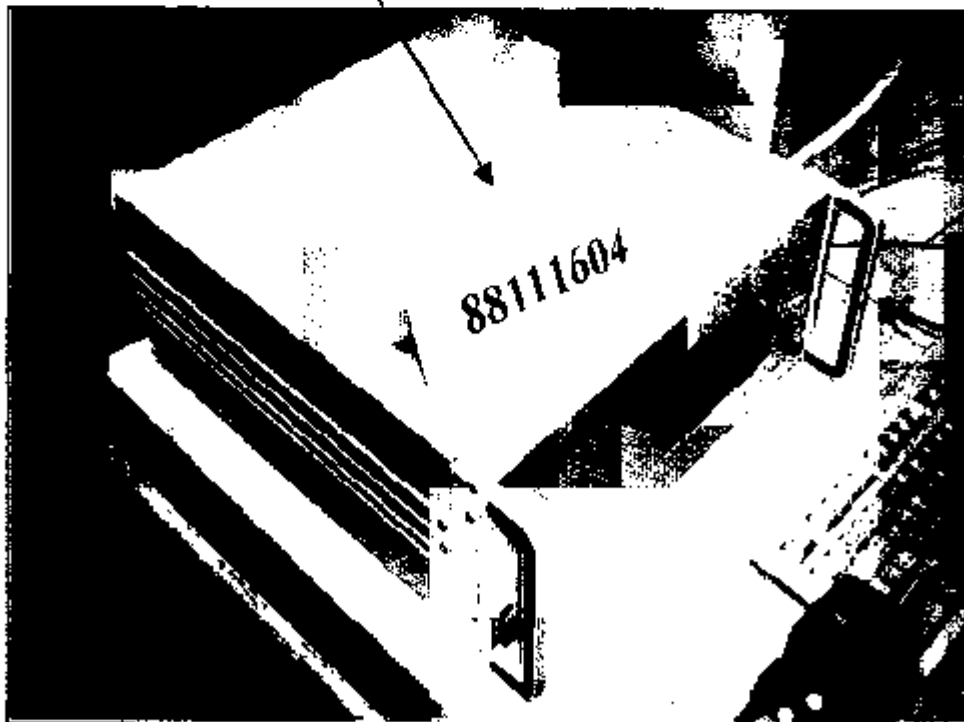




## ESD TEST



3





**ESD TEST**

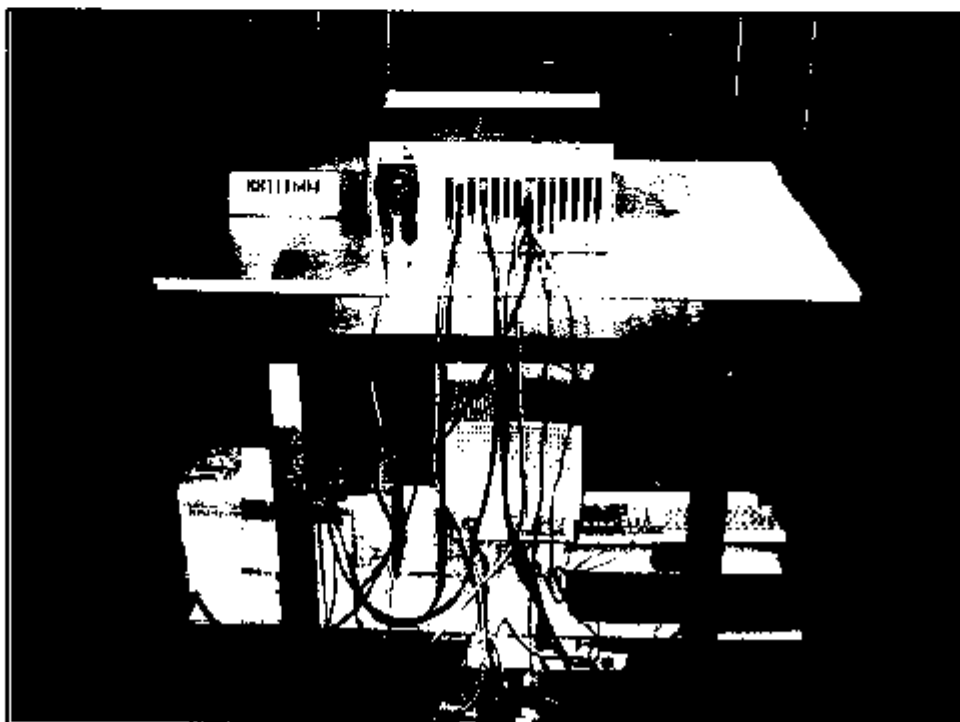
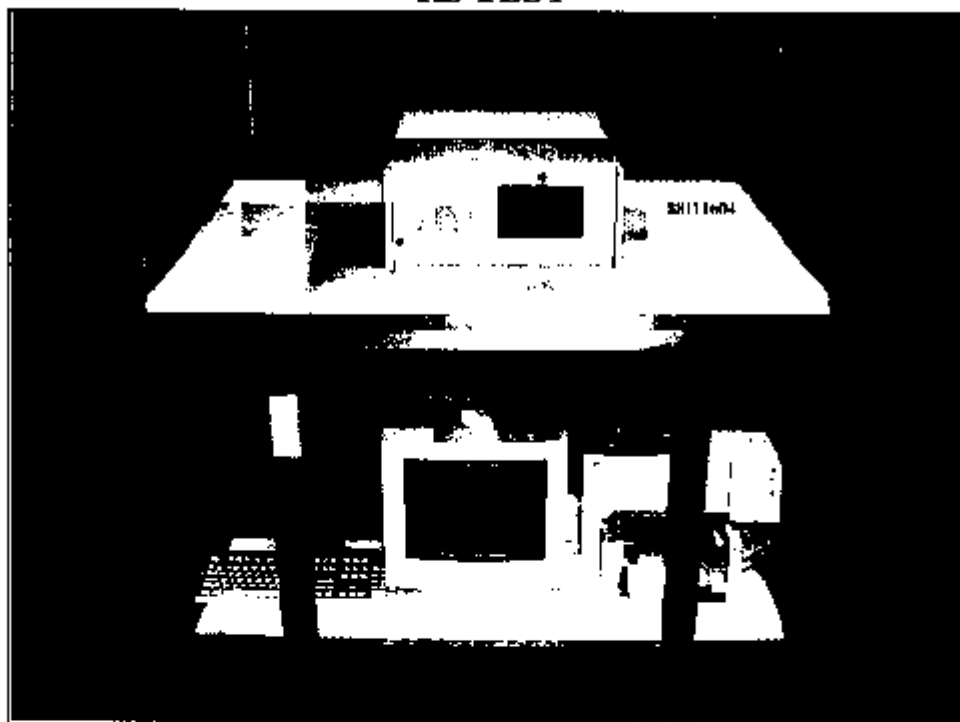


2

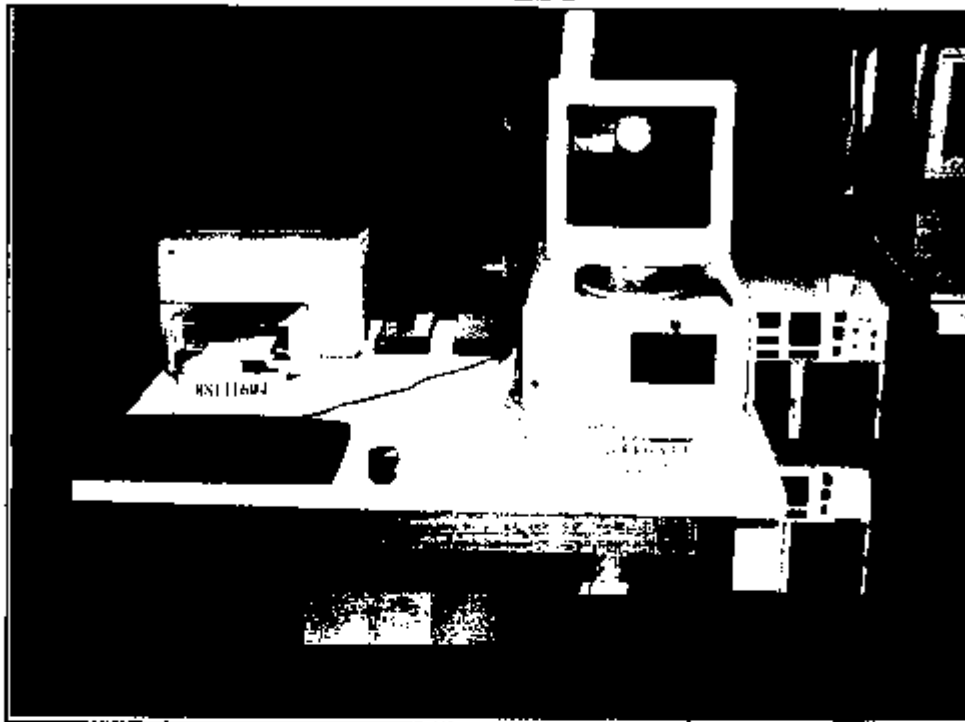
1

4

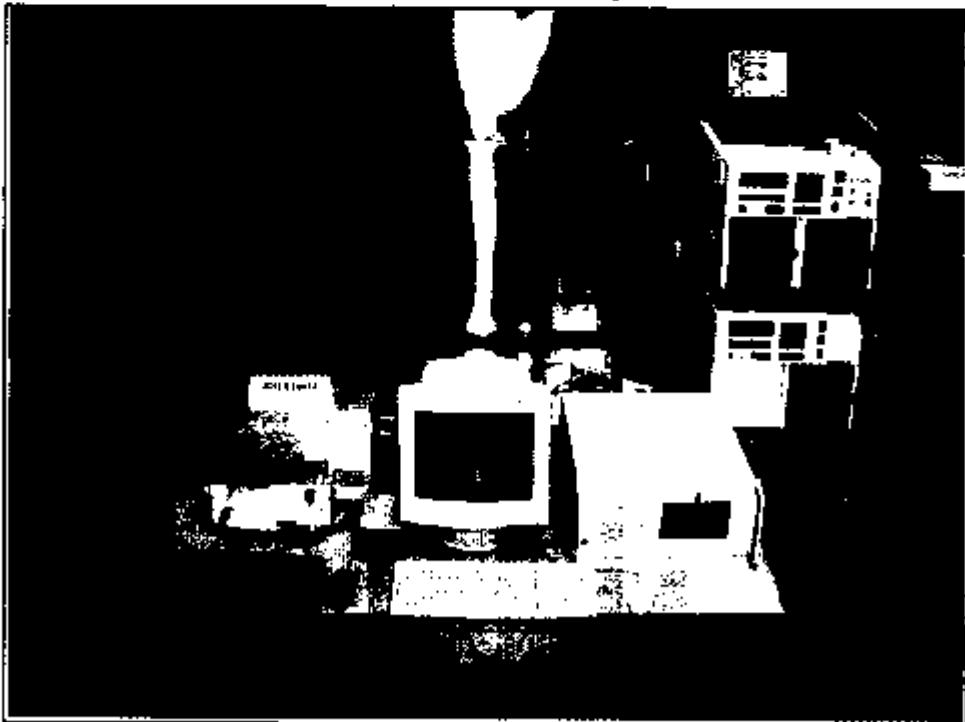
# RS TEST



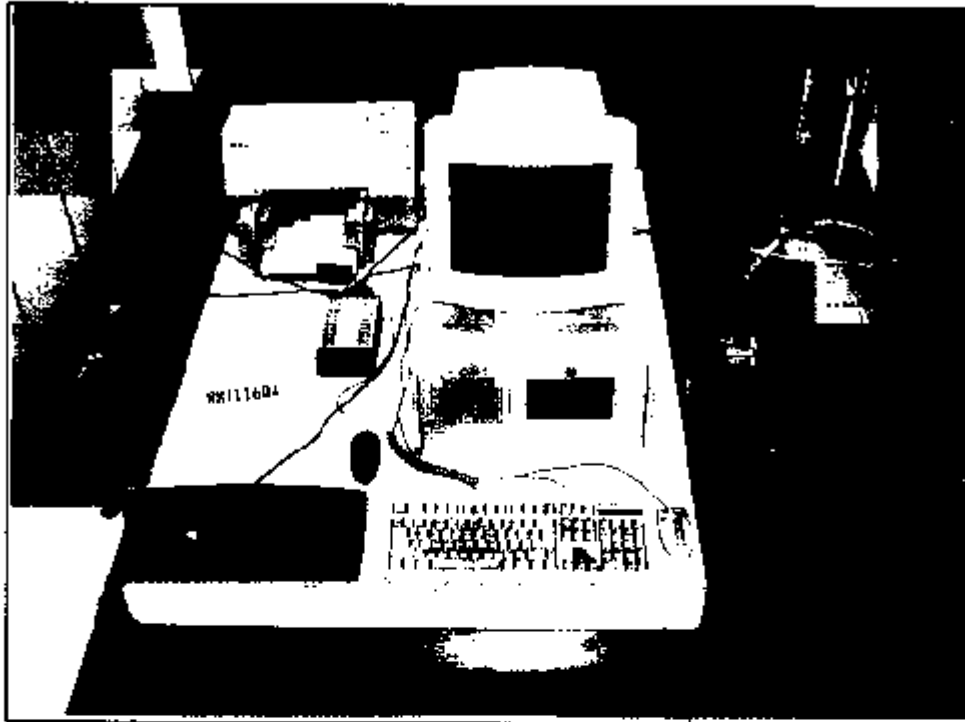
### EFT TEST



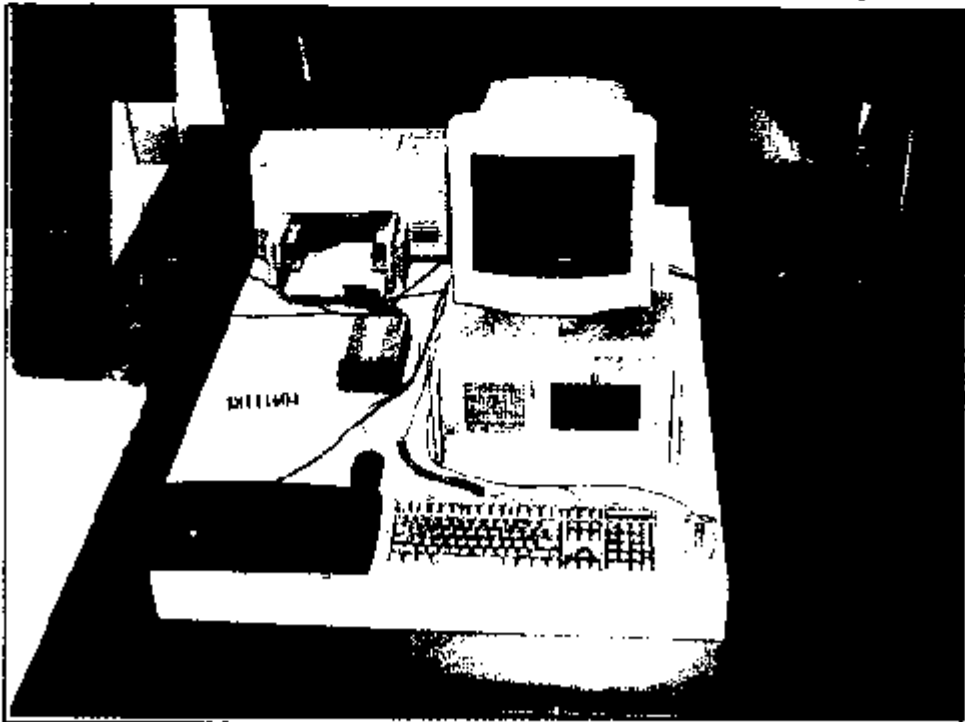
### EFT CLAMP TEST



### CONDUCTED SUSCEPTIBILITY TEST

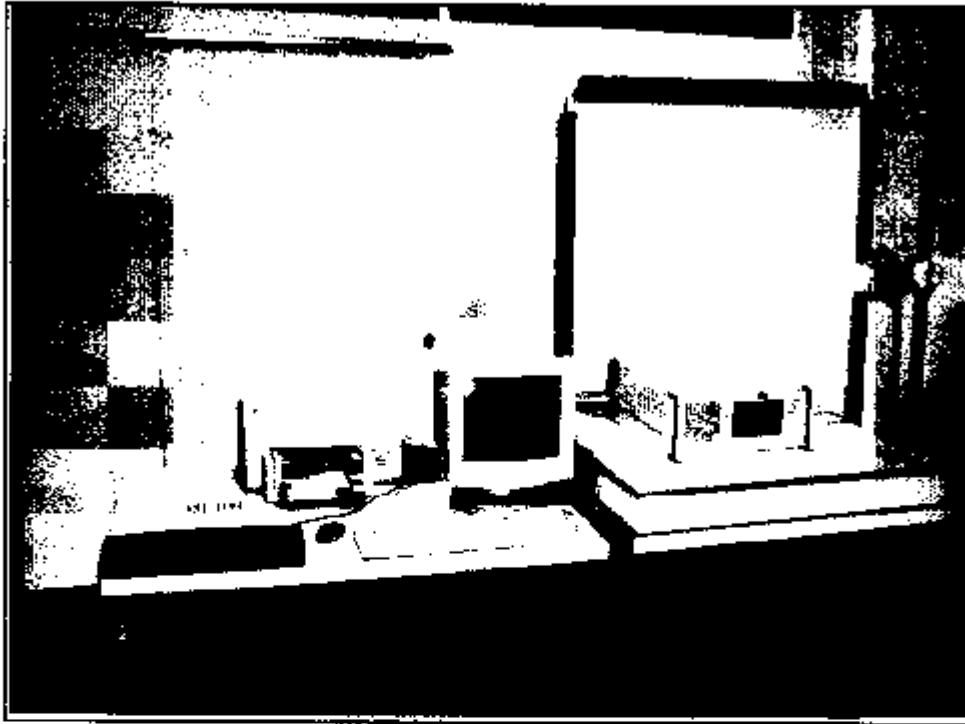


### CONDUCTED SUSCEPTIBILITY CLAMP TEST





## MAGNETIC TEST







## 7. 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<br>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](mailto:service@mail.adt.com.tw)  
<http://www.adt.com.tw>



## CONSTRUCTION PHOTOS OF EUT

