HomeTek Technology Inc.

ADDRESS: No.85-5, Shir Men Road, Tu Cheng City,
Taipei Hsien, TAIWAN, R. O. C.
PHONE : 886-2-22608375 FAX : 886-2-22748013
E - mail : hometek@ms15.hinet.net

CERTIFICATE OF COMPLIANCE

EUT : Industrial PC
MODEL NO. : MBC-6210, ACS-2310G, MPI-925A, HPCI-14S
Final Test Date : 12/10/99 REPORT #: EA8L004
APPLICANT : ASTECH TECHNOLOGY CO., LTD.
ADDRESS : 6F-4, No. 351, Chung-Shan Rd., Sec. 2, Chung-Ho City, Taipei, Taiwan, R. O. C.

MEASUREMENT PROCEDURE USED :

- ☑ EN50081-1 (1992)
- ☐ EN50081-2 (1992)
  - ☐ EN55011 (1994)
  - ☑ EN55022 (1994)
  - ☐ EN61000-3-2
  - ☐ EN61000-3-3
- ☑ EN50082-1 (1997)
- ☐ EN50082-2 (1992)
  - ☑ EN 61000-4-2
  - ☑ EN 61000-4-3
  - ☑ EN 61000-4-4
  - ☑ EN 61000-4-5
  - ☑ EN 61000-4-6
  - ☑ EN 61000-4-8
  - ☑ EN 61000-4-11

WE HEREBY SHOW THAT :

THE MEASUREMENT SHOWN IN THE ATTACHMENT WERE MADE IN ACCORDANCE WITH THE PROCEDURES INDICATED, AND THE ENERGY EMITTED BY THE EQUIPMENT WAS FOUND TO BE WITHIN THE LIMITS APPLICABLE.

THIS TEST RESULTS OF THIS REPORT APPLIES TO ABOVE TESTED SAMPLE ONLY.

THIS TEST REPORT SHALL NOT BE REPRODUCE IN PART WITHOUT WRITTEN APPROVAL OF HOMETEK TECHNOLOGY INC.

PREPARED BY : Joan JOAN YANG DATE : 12/14/99

CHECK BY : SUSAN HUANG DATE : 12/14/99

APPROVED BY : Grant Huang GRANT HUANG/Manager DATE : 12/15/99

Declaration of Conformity

We(Manufacturer/Importer)

_____

(company name)

_____

(address)

declares under our sole responsibility that the product

Product name : Industrial PC

Model No. : MBC-6210, ACS-2310G,
MPI-925A, HPCI-14S

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

- ☑ EN50081-1 (1992)
- ☐ EN50081-2 (1992)
  - ☐ EN55011 (1994)
  - ☑ EN55022 (1994)
  - ☐ EN61000-3-2
  - ☐ EN61000-3-3
- ☑ EN50082-1 (1997)
- ☐ EN50082-2 (1992)
  - ☑ EN 61000-4-2
  - ☑ EN 61000-4-3
  - ☑ EN 61000-4-4
  - ☑ EN 61000-4-5
  - ☑ EN 61000-4-6
  - ☑ EN 61000-4-8
  - ☑ EN 61000-4-11

following the provisions of 89/336/EEC Directive

Place: _____ Signature: _____

Date : _____ Full name: _____

CE Title: _____

EA8L004

Declaration of Conformity

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  - ☐ EN61000-3-2
  - ☐ EN61000-3-3
- ☑ EN50082-1 (1997)
- ☐ EN50082-2 (1992)
  - ☑ EN 61000-4-2
  - ☑ EN 61000-4-3
  - ☑ EN 61000-4-4
  - ☑ EN 61000-4-5
  - ☑ EN 61000-4-6
  - ☑ EN 61000-4-8
  - ☑ EN 61000-4-11

following the provisions of 89/336/EEC Directive

Place: _____ Signature: _____

Date : _____ Full name: _____

CE Title: _____

EA8L004

TABLE OF CONTENTS

GENERAL INFORMATION

1	APPLICANT	:	ASTECH TECHNOLOGY CO., LTD.
2	ADDRESS	:	6F-4, No. 351, Chung-Shan Rd., Sec. 2, Chung-Ho City, Taipei, Taiwan, R. O. C.
3	MANUFACTURER	:	ASTECH TECHNOLOGY CO., LTD.
4	ADDRESS	:	6F-4, No. 351, Chung-Shan Rd., Sec. 2, Chung-Ho City, Taipei, Taiwan, R. O. C.

5 DESCRIPTION OF EUT :

EUT	:	Industrial PC
Model	:	MBC-6210, ACS-2310G, MPI-925A, HPCI-14S
Serial #	:	N/A
Data Cable	:	SHIELDED
Power Cord	:	UN-SHIELDED
Power Supply Type	:	SWITCHING

5.1 ACS-2310G, MPI-925A, HPCI-14S for OEM Model.

6 FEATURES OF EUT :

6.1 Processor Socket: Socket 370 connector

6.2 Processor: Intel Celeron 400MHz

6.3 Bus Speed: 66MHz

6.4 Chipset: Intel 440BX/440ZX AGPset

6.5 Secondary Cache: CPU integrated

6.6 Memory Sockets:

Two (for 440ZX)/Three (for 440BX) 168-pin DIMM sockets

Max. 512MB/768MB SDRAM

Memory type: SDRAM (Synchronus DRAM)

MODIFICATION LIST

THE FOLLOWING ACCESSORIES WERE ADDED TO THE EUT DURING TESTING :

NO MODIFICATION BY HOMETEK TECHNOLOGY INC.

CONDUCTED POWER LINE TEST

1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the conducted test :

Item	Instruments/ Facilities	Specification	Manufacturer	Model #	Date Of Cal.
1	EMI Receiver	9KHz ~ 30MHz	ROHDE & SCHWARZ	ESHS 30	MAR/99
2	LISN	50Ω/50uH/100A 9KHz ~ 30MHz	SCHWARZ BECK	NNLK 8121	MAR/99
3	LISN	9KHz ~ 30MHz	ROHDE & SCHWARZ	ESH3-Z5	MAR/99
4	Cables	10KHz ~ 30MHz		NO : 10	JUL/99

2 TEST PROCEDURE

2.1 The EUT was tested according to **EN55022 Class A**.

2.2 The EUT was placed 0.4 meter from the conducting wall of shielding room and kept at least 0.8 meter from any other grounded conducting surface.

2.3 The frequency range form 0.15 MHz to 30 MHz was investigated.

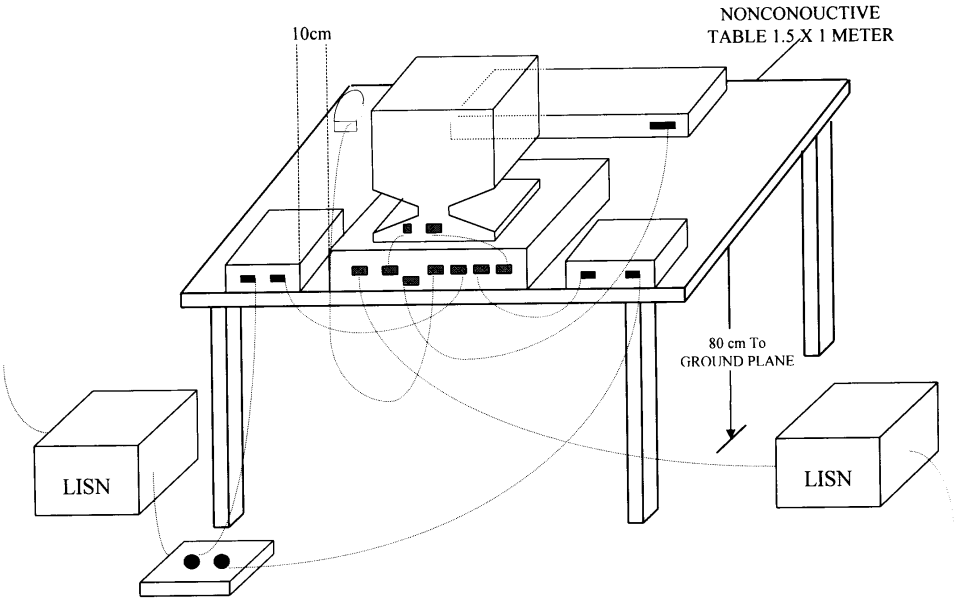
2.4 The LISN used was 50 Ohm / 50 uHenry as specified by **EN55022 Class A**.

2.5 All the support peripherals are connect to the other LISN.

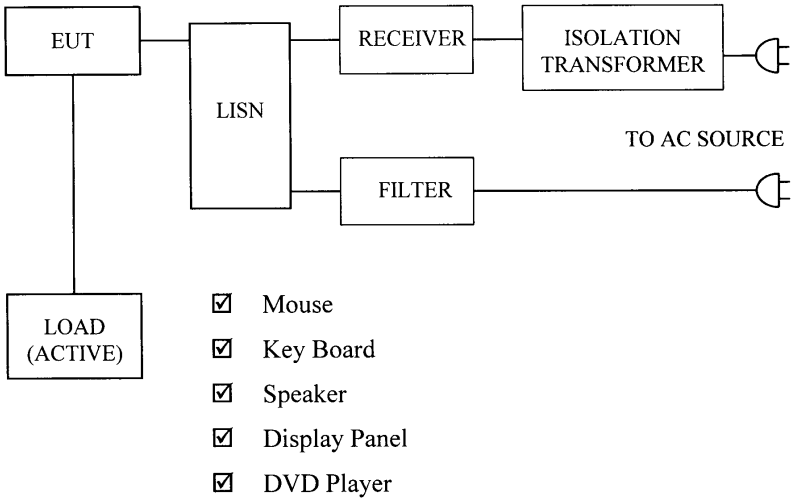
2.6 Cables and peripherals were moved to find the maximum emission levels for each frequency.

3 TEST SETUP

3.1 Typical : Setup Of Conducted Test



3.2 Block Diagram Of Conducted Test



- ☑ Mouse
- ☑ Key Board
- ☑ Speaker
- ☑ Display Panel
- ☑ DVD Player

4 CONFIGURATION OF THE EUT

The EUT was configured according to **EN55022 Class A**. All I/O ports were connected to the appropriate peripherals. All peripherals and cables are listed below (including internal device) :

4.1 EUT

EUT Type	:	☐Proto Type ☑Engineer Type ☐Mass Production
Condition when received	:	☑Good ☐Damage : _____
Connector Type	:	☑Metal Type ☐Plastic Type
Device	:	Industrial PC
Applicant	:	ASTECH
Manufacturer	:	ASTECH
Model Number	:	MBC-6210, ACS-2310G, MPI-925A, HPCI-14S
Serial Number	:	N/A
FCC ID	:	N/A
Data Cable	:	SHIELDED
Power Cord	:	Un-Shielded, 1.8 m

4.2 PERIPHERALS

☑ Mouse (PSII)

Manufacturer	:	HP
Model Number	:	M-S34
Serial Number	:	LZA72270727
FCC ID	:	DZL211029
Data Cable	:	Shielded, 1.8 m, Connected to the PSII port
Power Cord	:	N/A

☑ KeyBoard (PSII)

Manufacturer	:	AST
Model Number	:	SK-2000REW
Serial Number	:	C9612097280
FCC ID	:	GYUR34SK
Data Cable	:	Shielded, 1.5 m, Connected to the PSII port
Power Cord	:	N/A

☑ Speaker

Manufacturer	:	ARA
Model Number	:	AP-317
Serial Number	:	N/A
FCC ID	:	N/A
Data Cable	:	Shielded
Power Cord	:	Un-Shielded, 1.3 m

☑ Display Panel

Manufacturer	:	ASTECH
Model Number	:	AMB-2215AT
Serial Number	:	N/A
FCC ID	:	N/A
Data Cable	:	Shielded, 1.8 m
Power Cord	:	N/A

☑ DVD Player

Manufacturer	:	ESONIC
Model Number	:	DV-3306
Serial Number	:	N/A
FCC ID	:	N/A
Data Cable	:	Un-Shielded, 1.8 m,
Power Cord	:	N/A

4.3 REMARK :

5 EUT OPERATING CONDITION

5.1 Operating condition is according to **EN55022 Class A**.

5.2 CPU : Pentium - 400 MHz
CPU Clock : 66 MHz

5.3 The oscillator frequency of the EUT were 400 MHz.

5.4 Turn on the power of all equipments.

6 LIMIT OF CONDUCTED POWER LINE EMISSION CLASS A :

Frequency Range	Quasi Peak	Average
0.15 ~ 0.5 MHz	79 dBuV	66 dBuV
0.5 ~ 5 MHz	73 dBuV	60 dBuV
5 ~ 30 MHz	73 dBuV	60 dBuV

7 RESULT OF CONDUCTED POWER LINE TEST

7.1 The frequency range from 0.15 MHz to 30 MHz was investigated. All readings are quasi-peak values and average.

7.2 IF bandwidth : 9 kHz, Meas Time : 1 sec.

7.3 Temperature : 27 ℃, Humidity : 75 % RH.

7.4 Deviations from the specifications : None

7.5 Quasi-Peak :

Frequency (MHz)	Line 1 (dBuV)	Line 2 (dBuV)	Limit (dBuV)
0.178	50.72	50.52	79
0.296	42.37	42.18	79
1.305	31.53	31.02	73
3.685	32.90	29.38	73
9.440	25.67	31.49	73
24.950	30.90	31.53	73

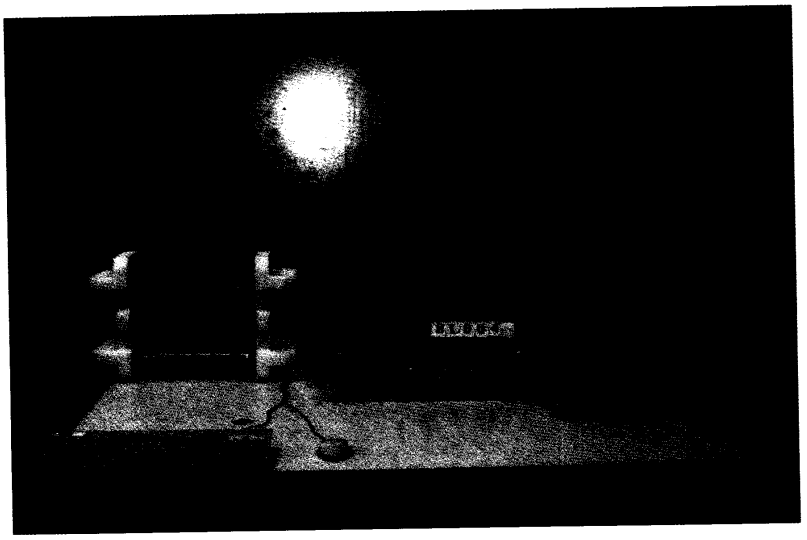
7.6 Average :

Frequency (MHz)	Line 1 (dBuV)	Line 2 (dBuV)	Limit (dBuV)
0.179	38.83	38.91	66
0.297	34.05	35.53	66
1.305	29.56	29.89	60
3.440	30.99	25.57	60
9.440	21.22	28.44	60
24.530	27.43	28.67	60

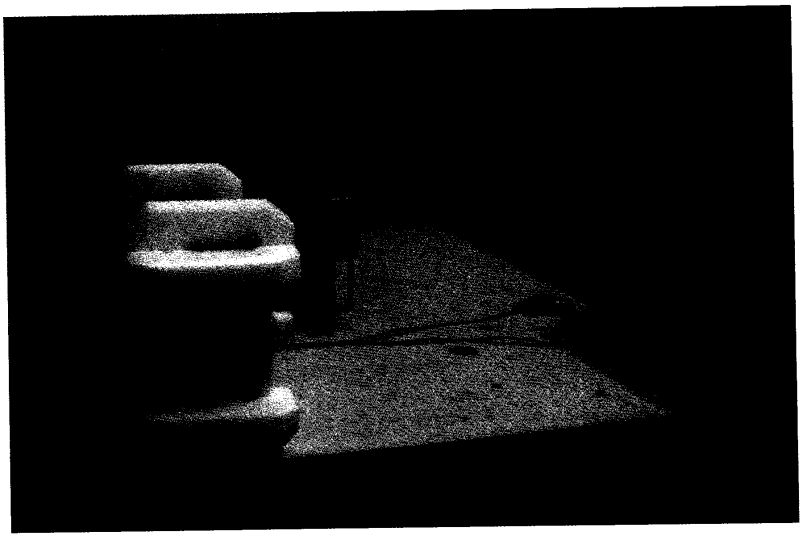
REMARK :

1. Model : MBC-6210
2. Measuring mode :
3. Uncertainty in conduction emission measured : < ± 2.0dB.
4. " * ", means this data is worse case emission level.
5. Result : **PASSED**

8 PHOTO OF CONDUCTED POWER LINE TEST
Model : MBC-6210



Front View



Rear View

RADIATED EMISSION TEST

1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the radiated emission test :

Item	Instruments /facilities	Specification	Manufacturer	Model # / S/N#	Location	Date of Cal.
1	OPEN AREA TEST SITE	☐ OATS 1 ☑ OATS 2				NOV/99 JUN/99
2	EMI TEST RECEIVER	20MHz ~ 5GHz	ROHDE & SCHWARZ	ESBI 845636/007	Open Site I	SEP/99
3	PRE-AMPLIFIER	0.1MHz ~ 1.3 GHz	HP	8447D 1937A02095	Open Site II	MAY/99
4	EMI TEST RECEIVER	20Hz ~ 26.5GHz	ROHDE & SCHWARZ	ESMI 845442/006	Open Site II	APR/99
5	PRE-AMPLIFIER	20MHz ~ 7GHz	ROHDE & SCHWARZ	ESMI-Z7 664126/008	Open Site I	SEP/99
6	ANTENNA (BI-LOG)	25MHz ~ 2GHz	SCHAFFNER	CBL6112B S/N : 2614	Open Site II	JUN/99
7	ANTENNA (BI-LOG)	25MHz ~ 2GHz	SCHAFFNER	CBL6112B S/N : 2611	Open Site I	JUN/99
8	CABLES	30MHz ~ 1GHz		No. 2, No. 4 No. 1, No. 3	OATS 1 OATS 2	NOV/99 JUN/99
9	ANTENNA (DIPOLE)	30 ~ 300MHz	ROHDE & SCHWARZ	HZ-12 842899/08		JUL/99
10	ANTENNA (DIPOLE)	300 ~ 1000MHz	ROHDE & SCHWARZ	HZ-13 842007/0004		JUL/99
11	EMIVM	30 ~ 1000MHz	AUDIX	A582445 A582443	OATS 1 OATS 2	N/A

Note : 1. Items 1 ~ 8 upon which need to calibrated are with period of 1 year, except item 9-10.
2. Items 4 (for Site 2) is used for the final measurement.

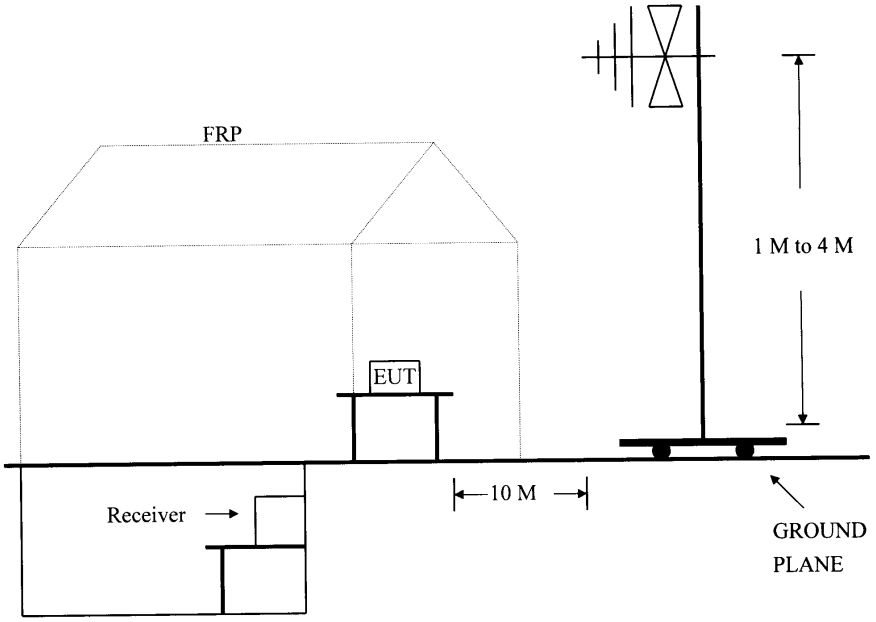
2 TEST PROCEDURE

2.1 The EUT was test according to **EN55022 Class A**.

2.2 The radiated test was performed at HomeTek Lab's Open Site II.

2.3 The frequency range from 30 MHz to 1 GHz, the measurement were made at 10 meters, with a BI-log antenna.

3 TEST SETUP



4 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

5 EUT OPERATING CONDITION

5.1 Same as "Conducted Power Line test", section 5

5.2 The radiated emission in the frequency range from 30 MHz - 1000 MHz was test in a horizontal and vertical polarization at HomeTek Lab's open site II.

6 LIMIT OF RADIATED EMISSION CLASSA :

Frequency (MHz)	Measurement Distance	Limit (dBuV/m)
30 - 230	10 (M)	40
230 - 1000	10 (M)	47

7 RESULT OF RADIATED EMISSION TEST

7.1 The frequency range from 30 MHz to 1 GHz was investigated. All readings are quasi-peak values with resolution bandwidth of 120 kHz.

7.2 The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at 10 meters.

7.3 The measurements were made at 10 meters of HomeTek Lab's open site II.

7.4 Temperature : 27 ℃, Humidity : 75 % RH.

7.5 Radiated Emission data : **Horizontal**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dB/m)	Cable Loss (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)
66.82	29.43	5.00	0.99	35.42	40
133.63	22.39	10.90	1.35	34.64	40
162.47	24.89	9.20	1.42	35.51	40
200.06	25.98	9.00	1.57	36.55	40
233.87	29.77	9.60	1.75	41.12	47
300.68	27.87	12.90	1.96	42.73	47
400.92	21.55	16.00	2.31	39.86	47
467.93	16.50	17.02	2.46	35.98	47

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 467.93 MHz .
- Corrected Reading : (16.50) + (17.02) + (2.46) = 35.98 . (Emission Level)

7.6 Radiated Emission data : **Vertical**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dB/m)	Cable Loss (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)
66.82	28.41	5.00	0.99	34.40	40
133.64	19.80	10.90	1.35	32.05	40
162.50	20.65	9.20	1.42	31.27	40
200.04	27.84	9.00	1.57	38.41	40
233.87	31.63	9.60	1.75	42.98	47
400.39	19.26	15.88	2.39	37.53	47
467.95	21.27	17.02	2.46	40.75	47
534.75	18.65	18.14	2.70	39.49	47

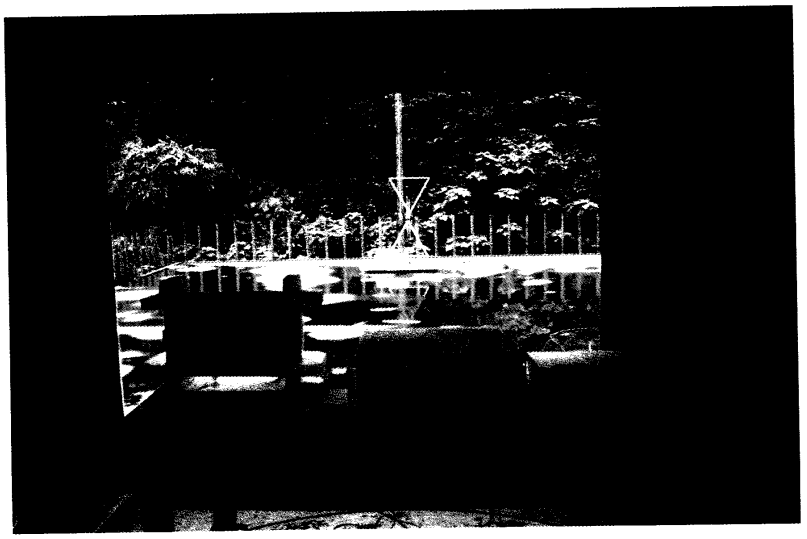
- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 534.75 MHz .
- Corrected Reading : (18.65) + (18.14) + (2.70) = 39.49 . (Emission Level)

REMARK :

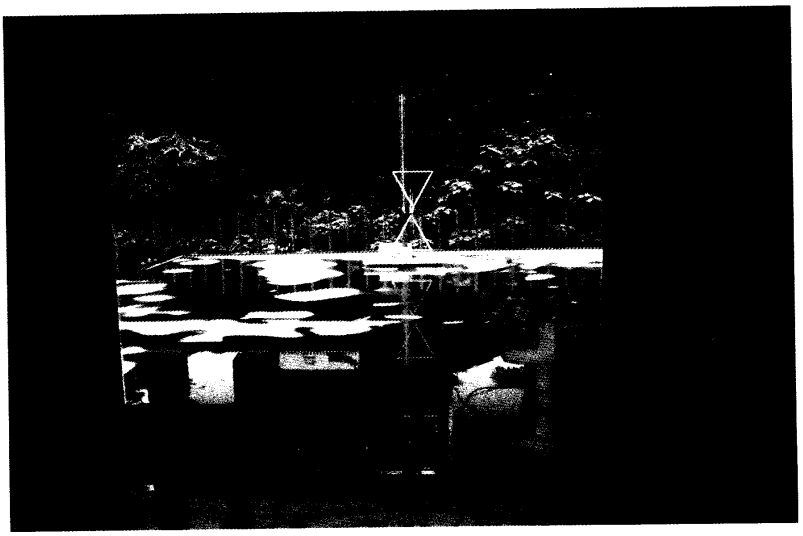
1. Model : MBC-6210
2. Measuring mode :
3. Uncertainty in radiated emission measured : < ± 4.0dB.
4. " * ", means this data is worse case emission level.
5. Result : **PASSED**

8 PHOTO OF RADIATED EMISSION TEST

Model : MBC-6210



Front View



Rear View

ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

1 TEST INSTRUMENTS & FACILITIES

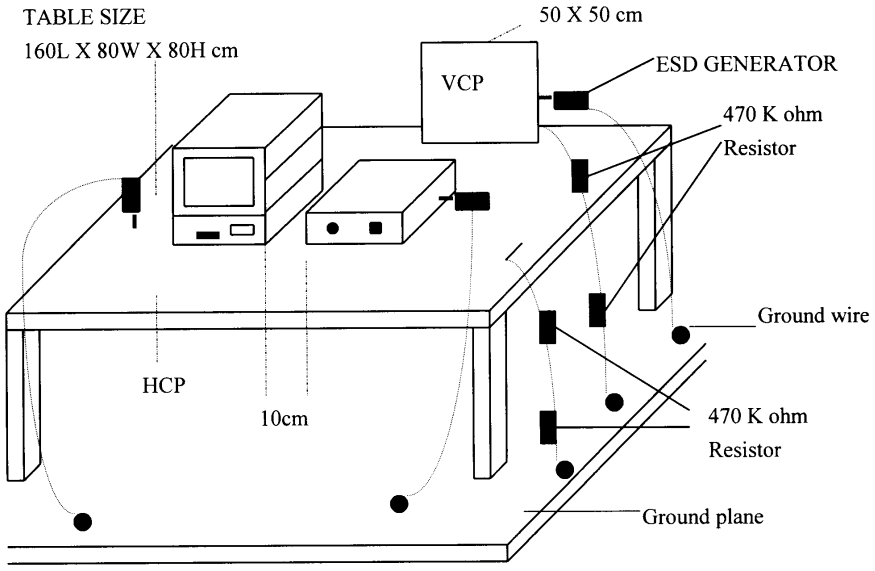
Instruments/ Facilities	Manufacturer	Model # Serial #	Data Of Cal.
ESD TESTER	HAEFELY	PESD 1600	MAR/99
VCP	HOMETEK	--	--

2 TEST PROCEDURE

According to **EN 61000-4-2**

According to **EN 50082-1 (1997)**

3 TEST SETUP



4 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

5 EUT OPERATION CONDITION

Same as "Conducted Power Line test", section 5

6 TEST CONDITION

6.1 Test Level :

(A) ± 8KV for air discharge.

(B) ± 4KV for contact discharge.

6.2 Number of test : 10 Discharge / Level

6.3 Time between test : 1 sec.

6.4 Temperature : 27 ℃

6.5 Humidity : 58 % RH.

7 PERFORMANCE CRITERIA

A. Normal performance within the specification.

B. Temporary degradation or loss function or performance which is self-recoverable.

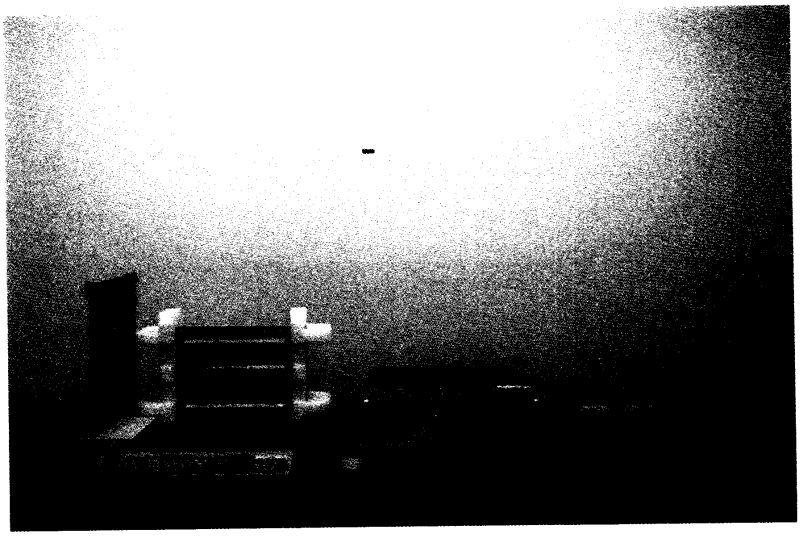
C. Temporary degradation or loss function or performance which requires operator intervention system reset.

D. Degradation or loss function which is not recoverable due to damage of EUT or software, or loss of data.

8 TEST RESULT

Test Point	Air Discharge	Contact Discharge	Performance Criteria	Result
HCP	± 8KV	± 4KV	B	PASSED
VCP	± 8KV	± 4KV	B	PASSED
CASE	± 8KV	± 4KV	B	PASSED
I/O PORTS	± 8KV	± 4KV	B	PASSED
LED	± 8KV	± 4KV	B	PASSED
SCREWS	± 8KV	± 4KV	B	PASSED
BUTTON	± 8KV	± 4KV	B	PASSED
Power Switch	± 8KV	± 4KV	B	PASSED

9 PHOTO OF ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)
Model : MBC-6210



RADIO FREQUENCY ELECTROMAGNETIC FILE IMMUNITY TEST

(RS)

1 TEST INSTRUMENTS & FACILITIES

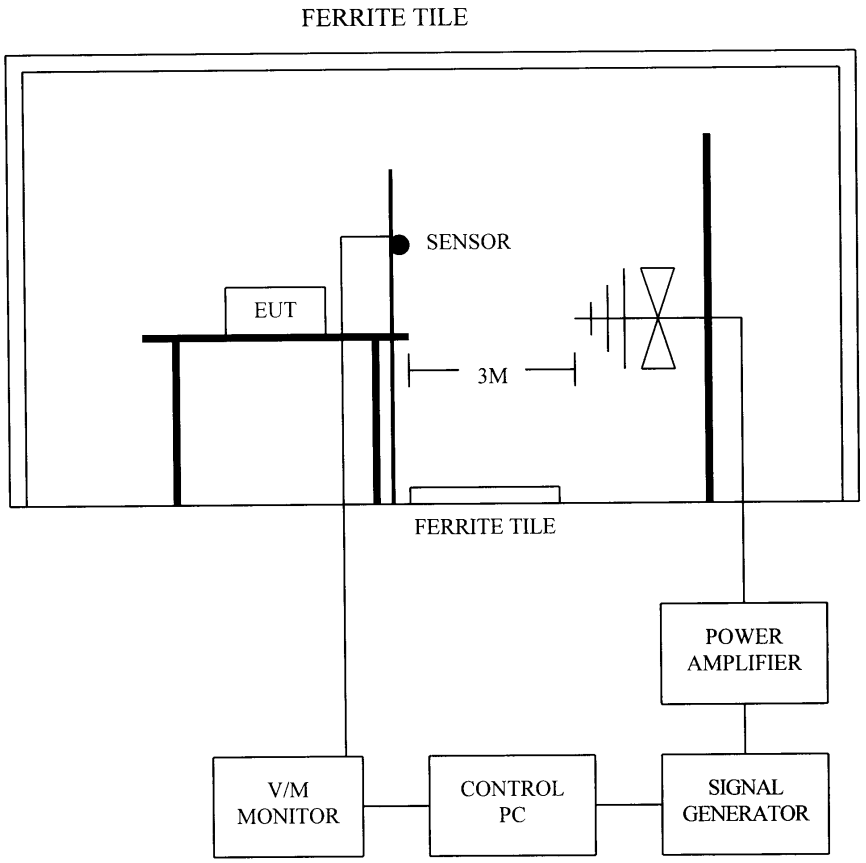
Instruments Facilities	Manufacturer	Model # Serial #	Data Of Cal.
SIGNAL GENERATOR	ROHDE & SCHWARZ	SMY02	FEB/99
AMPLIFIER	AMPLIFIER RESEACH	100W1000M1A	MAR/99
FIELD SENSOR	AMPLIFIER RESEACH	FP2000	MAR/99
FIELD MONITOR	AMPLIFIER RESEACH	FM2000	MAR/99
ANTENNA (BI-LOG)	ARA	LPB2520	MAR/99
CONTROL PC	KB TECH	KB P586/133	--

2 TEST PROCEDURE

According to **EN 61000-4-3**

According to **EN 50082-1 (1997)**

3 TEST SETUP



3.1 Chamber Size :

8M x 4M x 3M

4 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

5 OPERATION CONDITION OF EUT

Same as "Conducted Power Line test", section 5

6 TEST CONDITION

6.1 Frequency Range : 80 MHz ~ 1000 MHz

6.2 Filed Strength : 3 V / M

6.3 Frequency Step : 1 %

6.4 Antenna Polarity : HORIZONTAL & VERTICAL

6.5 The four sides of EUT are tested
(FRONT, REAR, RIGHT, LEFT)

6.6 Temperature : 27 ℃

6.7 Humidity : 75 % RH

7 PERFORMANCE CRITERIA

A. Normal performance within the specification.

B. Temporary degradation or loss function or performance which is self-recoverable.

C. Temporary degradation or loss function or performance which requires operator intervention system reset.

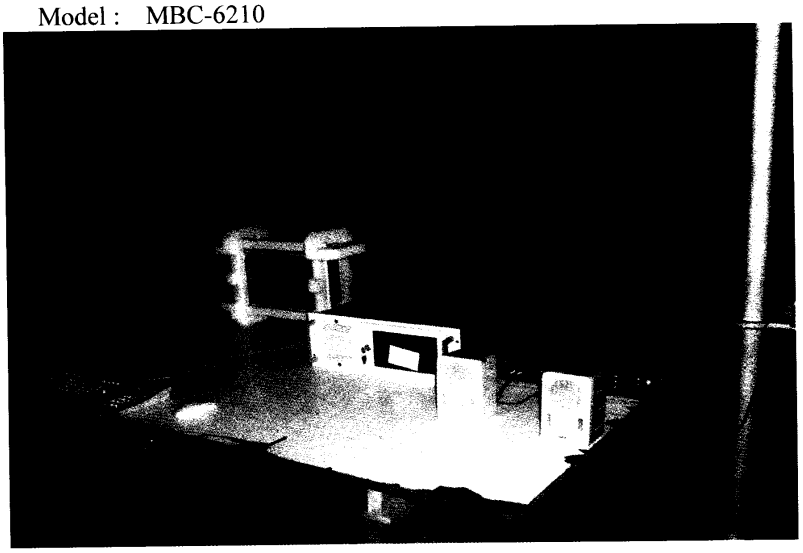
D. Degradation or loss function which is not recoverable due to damage of EUT or software, or loss of data.

8 TEST RESULT

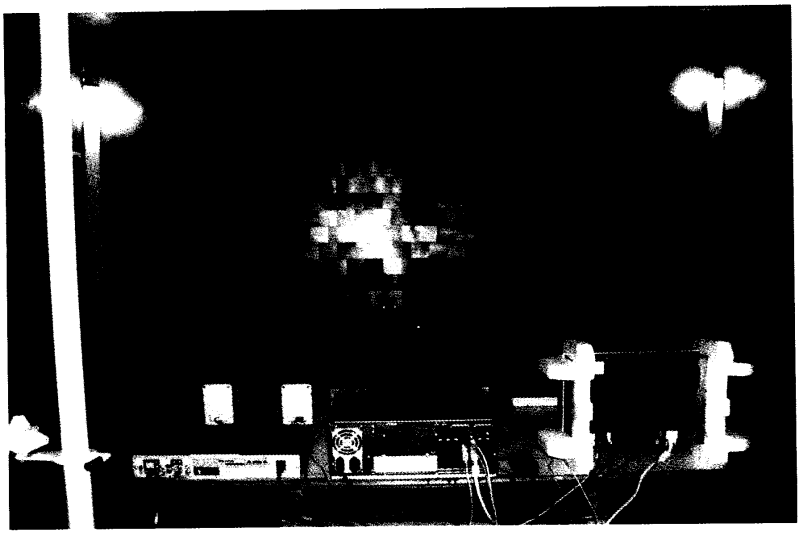
ANT / SIDE	HORIZONTAL	VERTICAL	RESULT
FRONT	A	A	PASSED
REAR	A	A	PASSED
RIGHT	A	A	PASSED
LEFT	A	A	PASSED

9 PHOTO OF RADIO FREQUENCY ELECTROMAGNETIC FILE IMMUNITY TEST (RS)

Model : MBC-6210



Front View



Rear View

ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT)

1 TEST INSTRUMENTS & FACILITIES

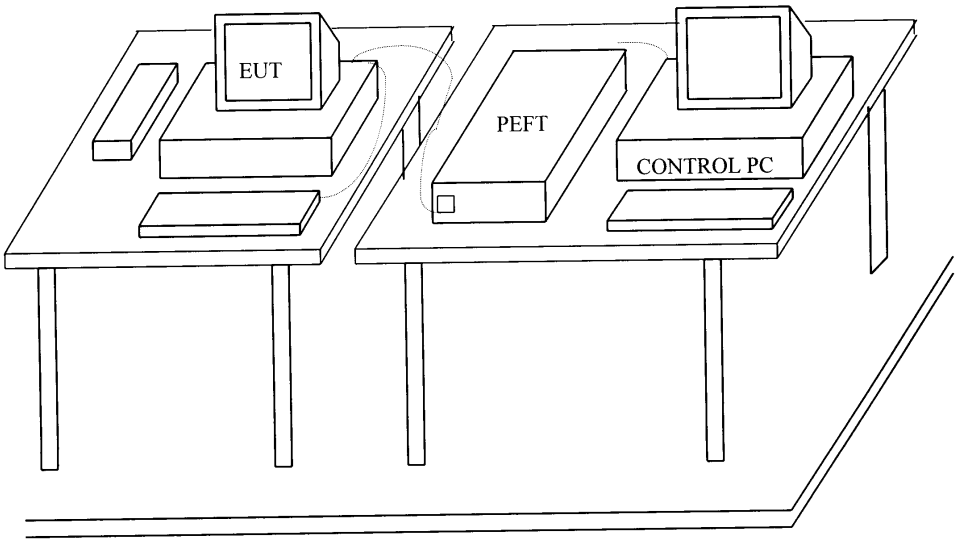
Instruments/ Facilities	Manufacturer	Model # Serial #	Data Of Cal.
BURST-TESTER	HAEFELY	PEFT/JUNIOR	MAR/99
CONTROL PC	KB TECH	KB P586/133	--

2 TEST PROCEDURE

According to **EN 61000-4-4**

According to **EN 50082-1 (1997)**

3 TEST SETUP



GROUND PLANE

4 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

5 OPERATION CONDITION OF EUT

Same as "Conducted Power Line test", section 5

6 TEST CONDITION

6.1 Pulse Rise time & Duration : 5 nS / 50 nS

6.2 Pulse Repetition : 5 kHz

6.3 Polarity : POSITIVE / NEGATIVE

6.4 Test Voltage : ± 0.5KV, ± 1KV

6.5 Coupling of power line :
L, N, PE, L+N, L+PE, N+PE, L+N+PE

6.6 Temperature : 27 ℃

6.7 Humidity : 75 % RH

7 PERFORMANCE CRITERIA

A. Normal performance within the specification.

B. Temporary degradation or loss function or performance which is self-recoverable.

C. Temporary degradation or loss function or performance which requires operator intervention system reset.

D. Degradation or loss function which is not recoverable due to damage of EUT or software, or loss of data.

8 TEST RESULT

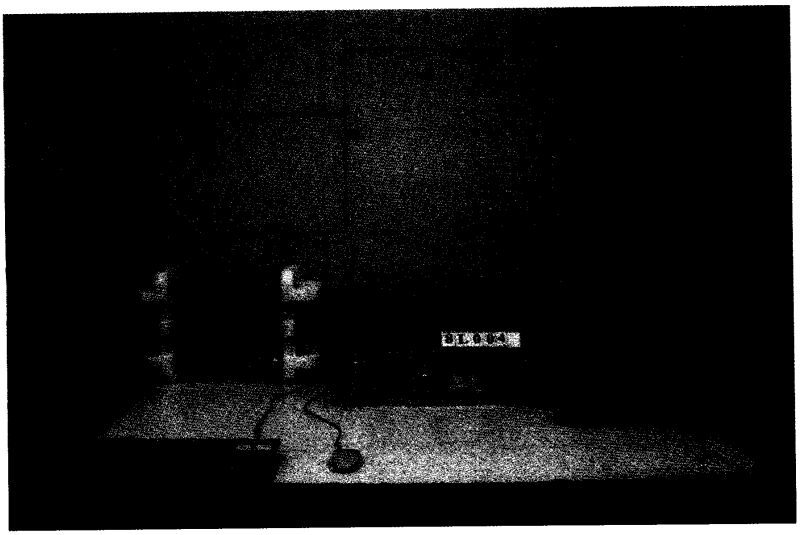
TEST VOLTAGE	L	N	PE	L+N	L+PE	N+PE	L+N+PE
± 0.5KV	B	B	B	B	B	B	B
± 1KV	B	B	B	B	B	B	B

8.1 Model : MBC-6210

8.2 Final Result : PASSED

8.3 Remark :

9 PHOTO OF ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT)
Model : MBC-6210



SURGE IMMUNITY TEST

1 TEST INSTRUMENTS & FACILITIES

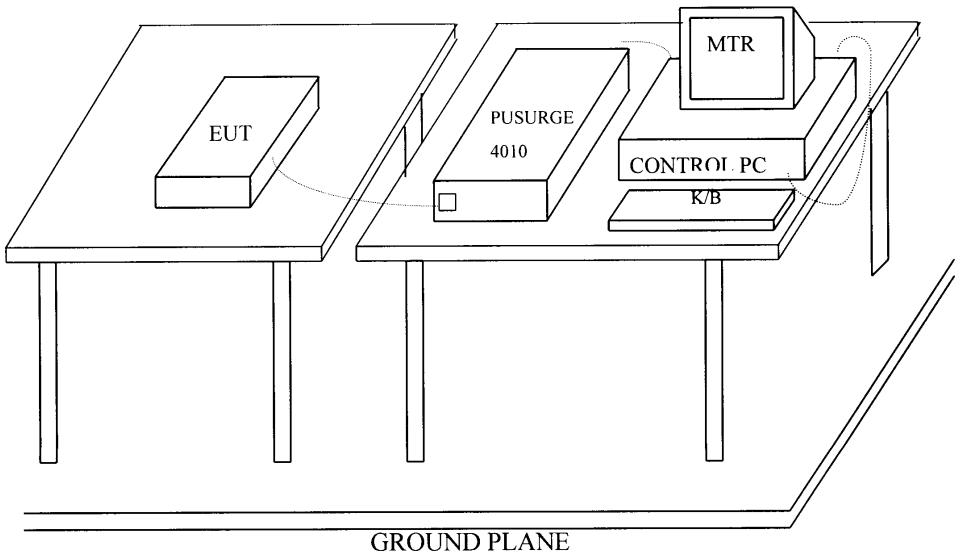
Instruments/ Facilities	Manufacturer	Model # Serial #	Data Of Cal.
SURGER-TESTER	HAEFELY	PUSURGE 4010 58333438	FEB/99
CONTROL PC	KB TECH	KB P586/133	--

2 TEST PROCEDURE

According To **EN 61000-4-5**

According To **EN 50082-1 (1997)**

3 TEST SETUP



4 TEST LEVELS

☑ Input and Output AC Power Ports.
☐ DC Input and DC Output Power Ports.

Environmental Phenomena	Test Specification		Units	Performance Criteria
	AC	DC		
Surges	1.2 / 50 (8/20)		Tr /Th us	
Line to Line	± 1	± 0.5	KV (Charge Voltage)	B
Line to Earth	± 2	± 0.5	KV (Charge Voltage)	B

5 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

6 EUT OPERATION CONDITION

Same as "Conducted Power Line test", section 5

7 CONDITIONS DURING TESTING

7.1 Coupling of power line :

(A) Line to Line ± 1KV (AC) or ± 0.5KV (DC)

(B) Line to Earth ± 2KV (AC) or ± 0.5KV (DC)

7.2 Polarity : POSITIVE / NEGATIVE

7.3 Phase shifting in a range between 0° to 360°

7.4 Repetion rate at least 1 per min

7.5 Temperature : 22 ℃ (15℃ ~ 35℃)

Humidity : 70 % RH.(10 % ~ 75%)

8 PERFORMANCE CRITERIA

A. Normal performance within the specification limits.

B. Temporary degradation or loss of function or performance which is self-recoverable.

C. Temporary degradation or loss of function or performance which requires operator intervention or system reset.

D. Degradation or loss of function which is not recoverable due to damage of equipment (components).

9 TEST RESULT

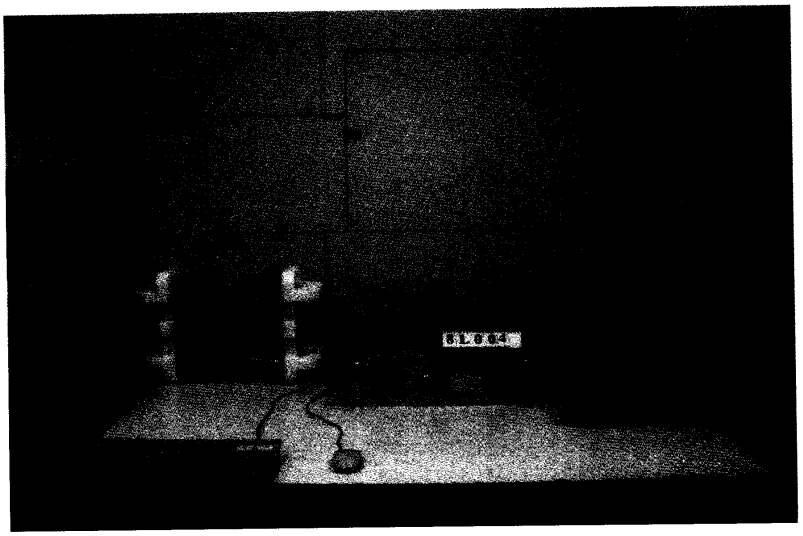
Environmental Phenomena	Test Specification	Units	Performance
Line to Line	± 1	KV (Charge Voltage)	B
Line to Earth	± 2	KV (Charge Voltage)	B

9.1 Model : MBC-6210

9.2 Final Result : PASSED

9.3 Remark :

10 PHOTO OF SURGE IMMUNITY TEST
Model : MBC-6210



Front View

IMMUNITY TEST TO CS CONDUCTED DISTURBANCE

1 TEST INSTRUMENTS & FACILITIES

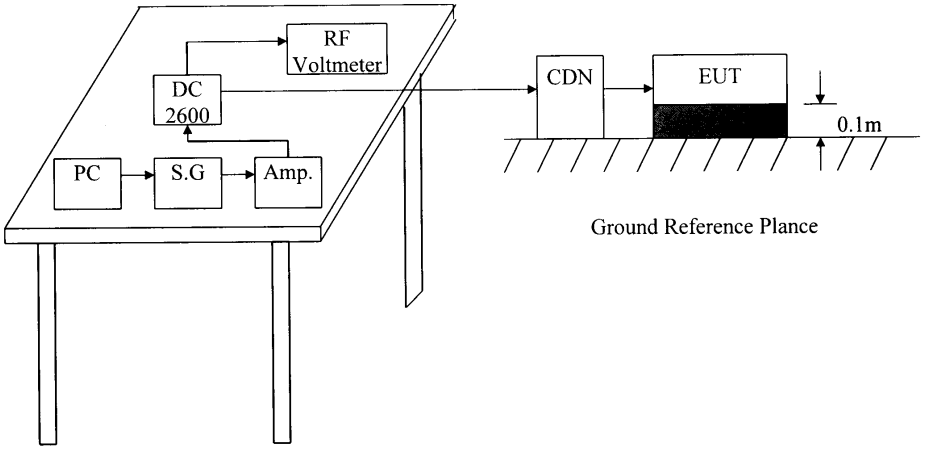
Instruments/ Facilities	Manufacturer	Model # Serial #	Date Of Cal.
SIGNAL GENERATOR	ROHDE & SCHWARZ	SMY02 845096/018	MAR/99
AMPLIFIER	AMPLIFIER RESEACH	75A250	MAR/99
RF VOLTMETER	BOONTON	9200C 361701AA	FEB/99
DIRECTION COUPLER	AMPLIFIER RESEACH	DC2600	MAR/99
COUPLING DECOUPLING NETWORK	FCC	M3	MAR/99
CONTROL PC	KB TECH	KB P586/133	--

2 TEST PROCEDURE

According To **EN 61000-4-6**

According To **EN 50082-1 (1997)**

3 TEST SETUP


RF
Voltmeter
DC
2600
PC
S.G
Amp.
CDN
EUT
0.1m
Ground Reference Plance

4 TEST LEVELS

- ☐ Ports for signal lines and control lines.
- ☐ DC input and DC output power ports.
- ☑ Input and Output AC Power Ports.
- ☐ Functional earth Ports.

Environmental	Test Specification	Units	Perfermance
Radio-frequency	0.15 - 80	MHz	
Common mode	3	V	A
	80	% AM (1KHz)	

5 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

6 EUT OPERATION CONDITION

Same as "Conducted Power Line test", section 5

7 CONDITIONS DURING TESTING

7.1 The size of the EUT :

(A) Wdith : 420 mm

(B) Height : 178 mm

(C) Depth : 426 mm

7.2 The EUT tested type :

- ☑ Single unit
- ☐ Multiple unit

7.3 Dwell time : < 1%

7.4 Temperature : 24 ℃ (15℃ ~ 35℃)

Humidity : 72 % RH.(10 % ~ 75%)

8 PERFORMANCE CRITERIA

A. Normal performance within the specification limits.

B. Temporary degradation or loss of function or performance which is self-recoverable.

C. Temporary degradation or loss of function or performance which requires operator intervention or system reset.

D. Degradation or loss of function which is not recoverable due to damage of equipment (components).

9 TEST RESULT

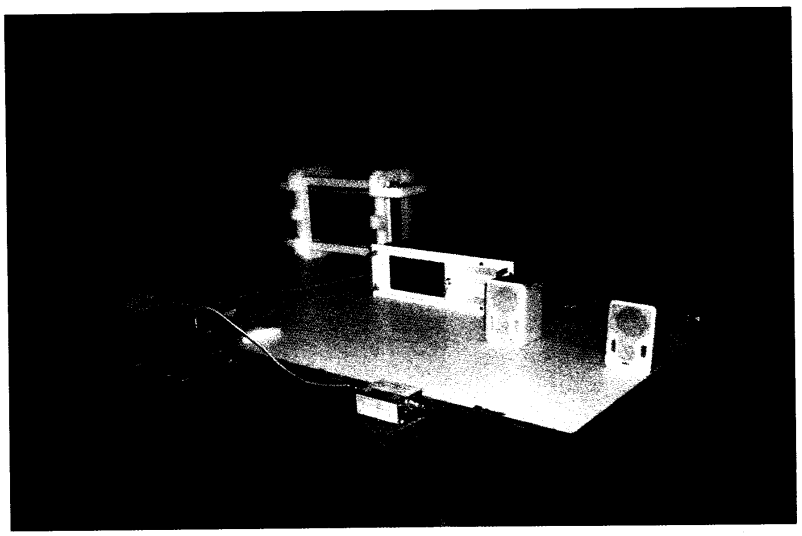
TEST Specification	Unit	Perfermance Criteria
0.15 - 80	MHz	
3	V	A
80	% AM (1KHz)	

9.1 Model : MBC-6210

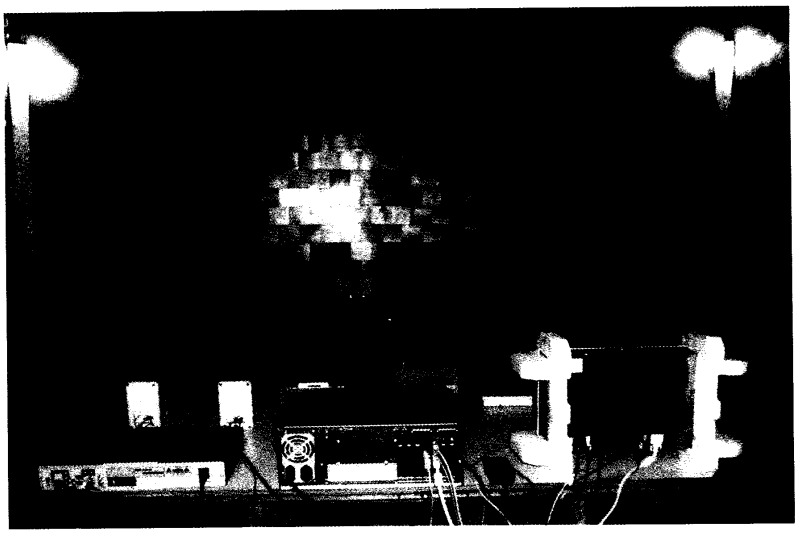
9.2 Final Result : PASSED

9.3 Remark :

10 PHOTO OF CS CONDUCTED DISTURBANCE IMMUNITY TEST
Model : MBC-6210



Front View



Rear View

POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

1 TEST INSTRUMENTS & FACILITIES

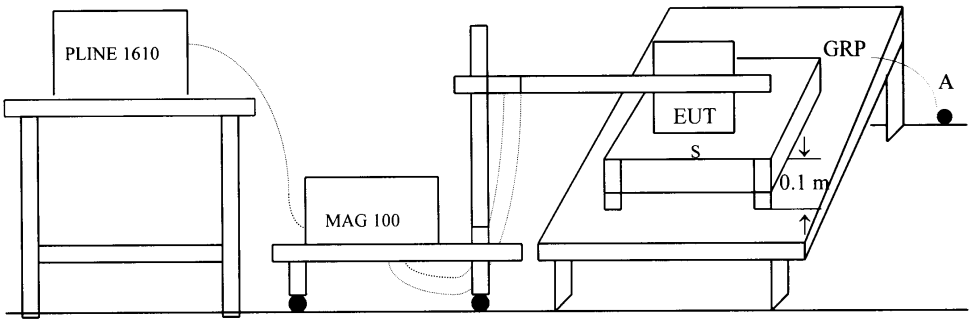
Instruments/ Facilities	Manufacturer	Model # Serial #	Data Of Cal.
LINE INTERFERENCE TESTER	HAEFELY	PLINE 1610 080166-10	MAR/99
MAGNETIC FIELD TESTER	HAEFELY	MAG 100 080206-01	FEB/99
CONTROL PC	KB TECH	KB P586/133	--

2 TEST STANDARD

According To **EN 61000-4-8**

According To **EN 50082-1 (1997)**

3 TEST SETUP



S: Insulating support
A: Safety earth
GRP: Ground plane

4 TEST LEVELS

Environmental Phenomena	Test Specification	Units	Performance Criteria
Power Frequency	50	HZ	
Magnetic Field	1	A/m	A
Magnetic Field	3	A/m	A

5 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

6 OPERATION CONDITION OF EUT

Same as "Conducted Power Line test", section 5

7 CONDITIONS DURING TESTING

7.1 Temperature : 21 ℃ (15℃ ~ 35℃)
Humidity : 72 % RH.(25 % ~ 75%)

7.2 The induction coil shall be rotated by 90°

8 PERFORMANCE CRITERIA

A. Normal performance within the specification limits.

B. Temporary degradation or loss of function or performance which is self-recoverable.

C. Temporary degradation or loss of function or performance which requires operator intervention or system reset.

D. Degradation or loss of function which is not recoverable due to damage of equipment (components).

9 TEST RESULTS

Environmental Phenomena	Test Specification	Units	Performance Criteria
Magnetic Field	1	A/m	A
Magnetic Field	3	A/m	A

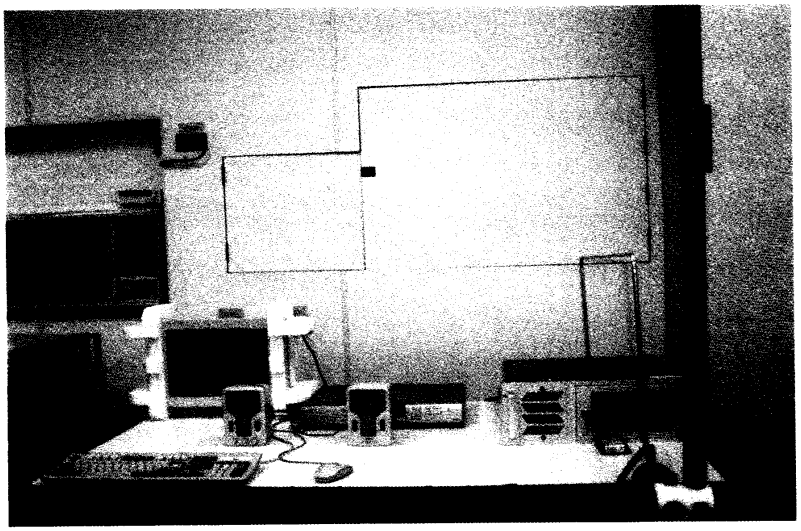
9.1 Model : MBC-6210

9.2 Final Results : PASSED

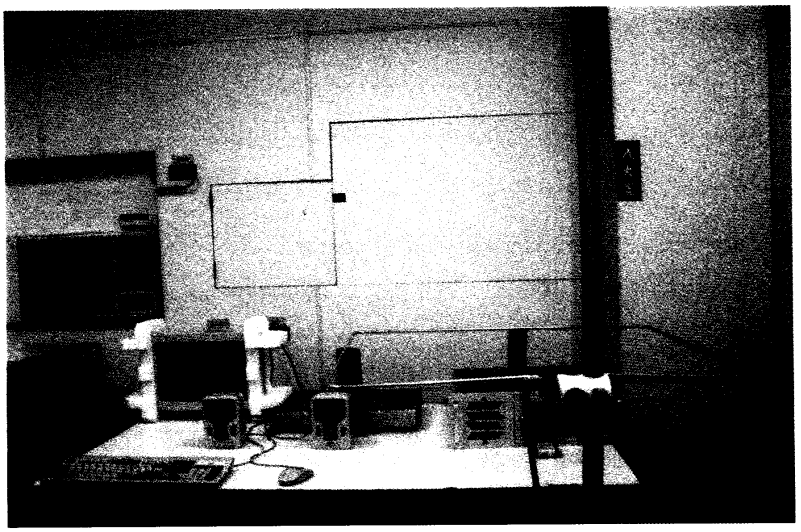
9.3 Remark :

10 PHOTO OF POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

Model : MBC-6210



Horizontal



Vertical

VOLTAGE DIPS, SHORT INTERRUPTIONS IMMUNITY TEST

1 TEST INSTRUMENTS & FACILITIES

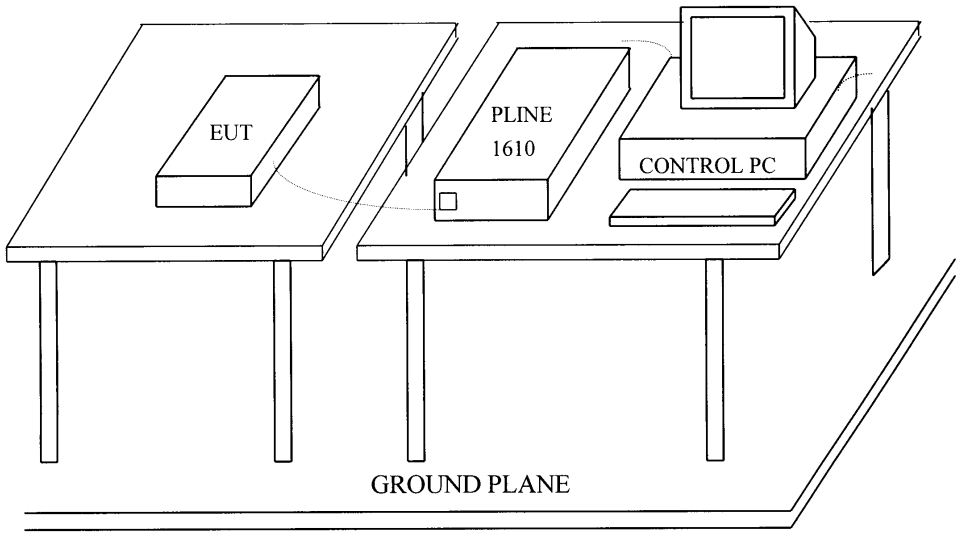
Instruments/ Facilities	Manufacturer	Model # Serial #	Data Of Cal.
LINE INTERFERENCE -TESTER	HAEFELY	PLINE 1610 080166-10	FEB/99
CONTROL PC	KB TECH	KB P586/133	--

2 TEST PROCEDURE

According To **EN 61000-4-11**

According To **EN 50082-1 (1997)**

3 TEST SETUP



4 TEST LEVELS

Input and Output AC Power Ports.

☑ Voltage Dips.

☑ Voltage Interruptions.

Environmental Phenomena	Test Specification	Units	Perform Criteria
Voltage Dips	30 10	% Reduction ms	B
	60 100	% Reduction ms	C
Voltage Interruptions	> 95 % 5000	% Reduction ms	C

5 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

6 EUT OPERATION CONDITION

Same as "Conducted Power Line test", section 5

7 CONDITIONS DURING TESTING

7.1 Temperature : 24 ℃ (15℃ ~ 35℃)

Humidity : 72 % RH.(25 % ~ 75%)

8 PERFORMANCE CRITERIA

A. Normal performance within the specification limits.

B. Temporary degradation or loss of function or performance which is self-recoverable.

C. Temporary degradation or loss of function or performance which requires operator intervention or system reset.

D. Degradation or loss of function which is not recoverable due to damage of equipment (components).

9 TEST RESULT

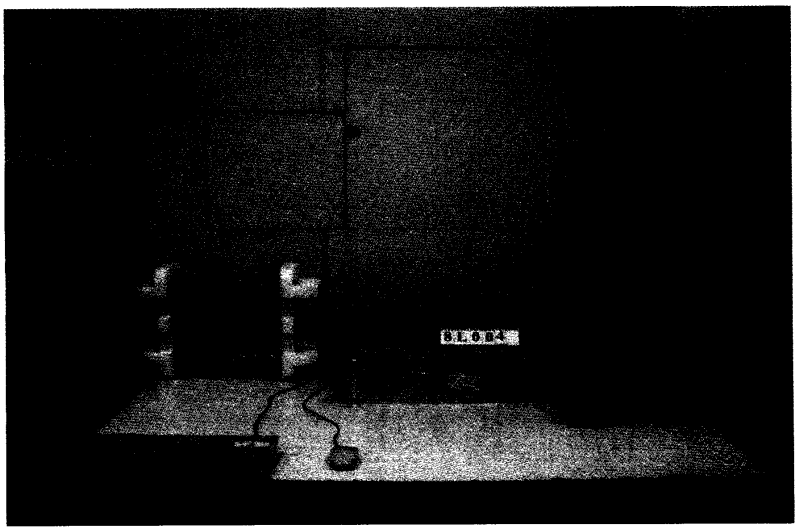
Environmental Phenomena	Test Specification	Units	Perform Criteria
Voltage Dips	30 10	% Reduction ms	B
	60 100	% Reduction ms	C
Voltage Interruptions	> 95 % 5000	% Reduction ms	C

9.1 Model : MBC-6210

9.2 Final Results : PASSED

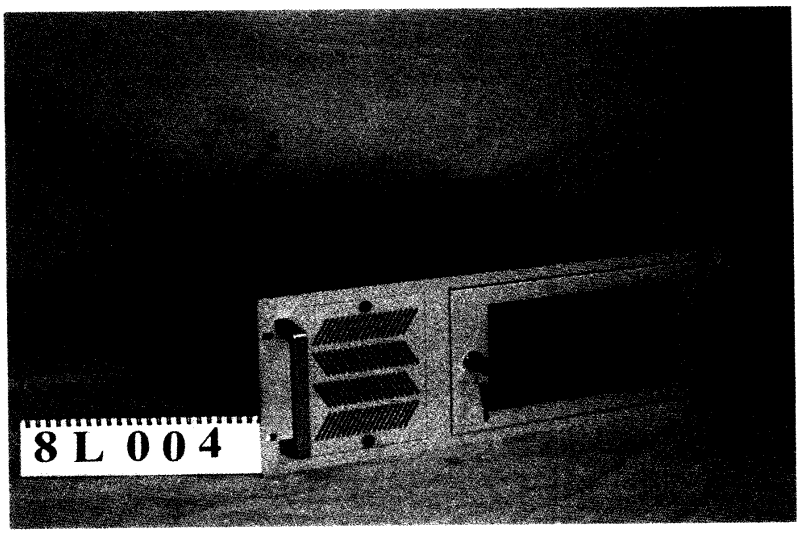
9.3 Remark :

11 PHOTO OF VOLTAGE DIPS, SHORT INTERRUPTIONS IMMUNITY TEST
Model : MBC-6210

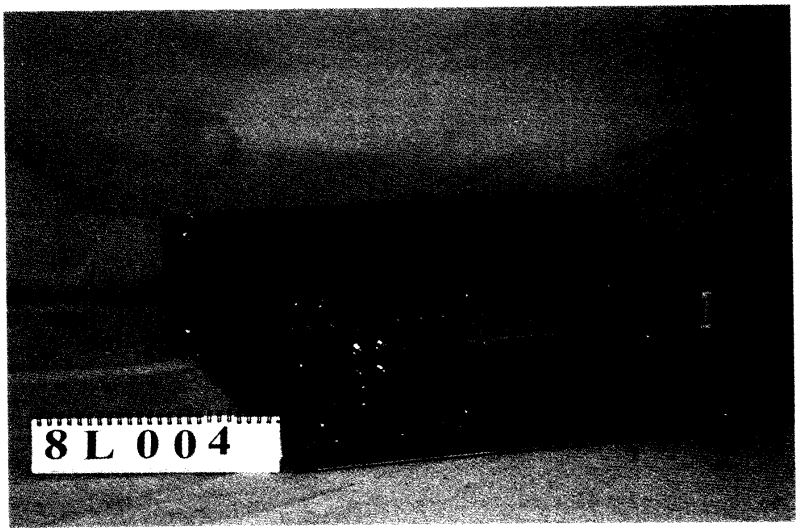


Front View

PHOTOS OF EUT

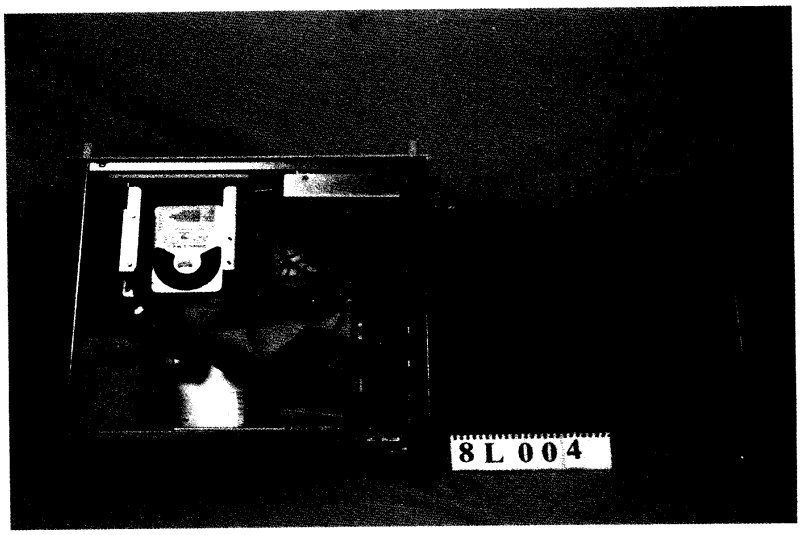


EUT Front View



EUT Rear View

PHOTOS OF EUT



EUT Inside View