CE REPORT FOR

EUT: INDUSTRIAL PC
MODEL: AMB-530,PIA-6436,MBC-263,PIA-6007,PIA-421

SRT REPORT # CE960520

PREPARED FOR:

ASTECH TECHNOLOGY CO., LTD.
6F-4, NO. 351, SEC. 2, CHUNG-SHAN ROAD,
CHUNG-HO CITY, TAIPEI, TAIWAN, R.O.C.

PREPARED BY:

SPECTRUM RESEARCH & TESTING LABORATORY INC.
NO. 101-10, LING 8 SHAN-TONG LI
CHUNG LI CITY, TAOYUAN, TAIWAN, R.O.C.

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.. TEST REPORT CERTIFICATION

APPLICANT : ASTECH TECHNOLOGY CO., LTD.

EUT DESCRIPTION : INDUSTRIAL PC

(A) POWER SUPPLY : 115V/230V

(B) MODEL : AMB-530,PIA-6436,MBC-263,PIA-6007,PIA-421

FINAL TEST DATE: 96/08/13

MEASUREMENT PROCEDURE USED :

* EN50081-2	* EN50082-2
EN55011 / CISPR 11	IEC801-2
EN60555-2	IEC801-3
EN60555-3	IEC801-4

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.

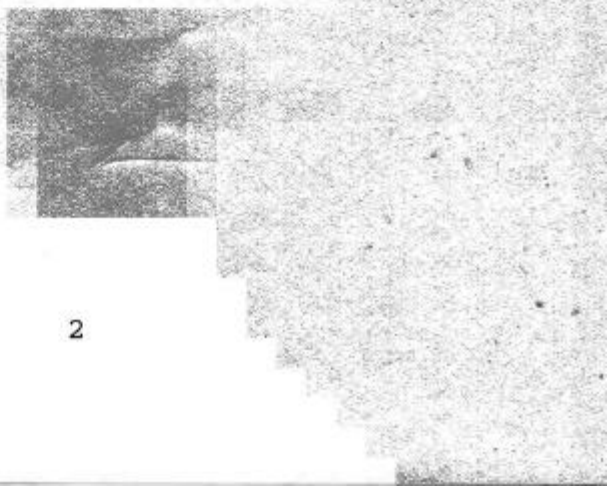
TESTING ENGINEER : _____ DATE 8/13/96

MANAGER : _____ DATE 8/13/96

2. EUT MODIFICATIONS

THE FOLLOWING ACCESSORIES WERE ADDED TO THE EUT DURING TESTING:

ADDED 9 SPRINGE FINGERS BETWEEN COVER AND CASE.



3. CONDUCTED POWER LINE TEST

3.1 TEST EQUIPMENT

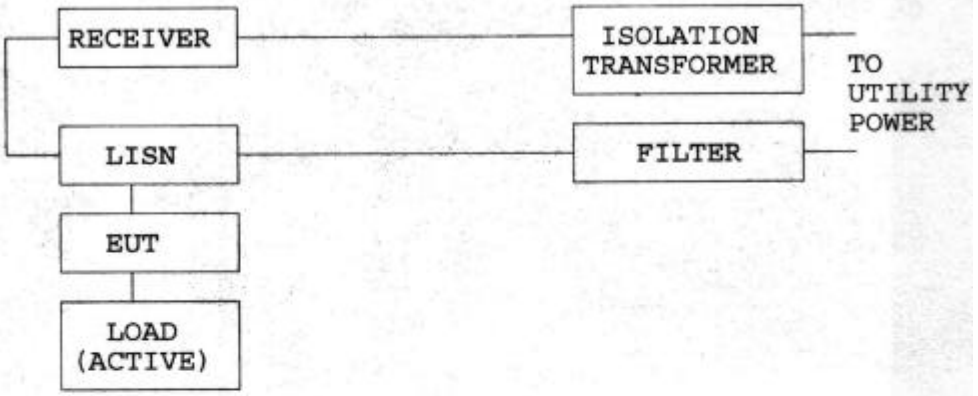
THE FOLLOWING TEST EQUIPMENT WAS USED DURING THE CONDUCTED POWER LINE TEST :

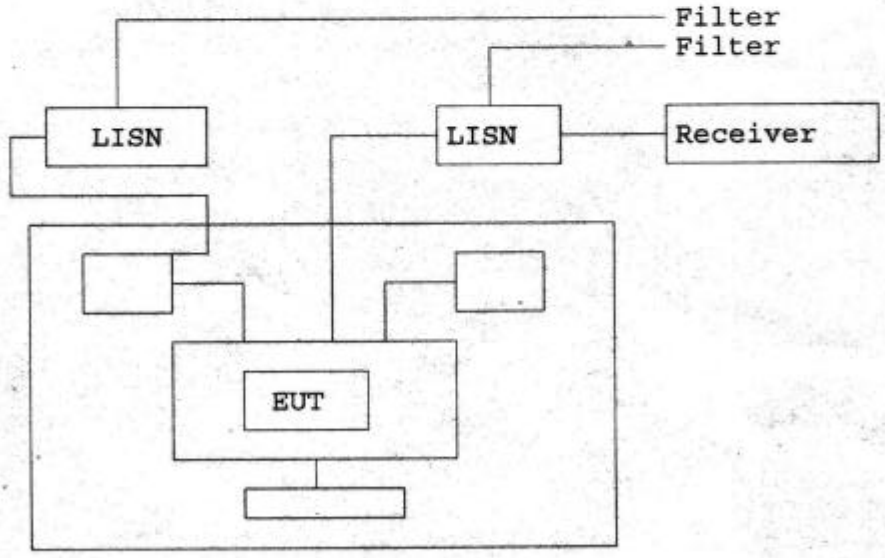
EQUIPMENT/ FACILITIES	MANUFACTURER	MODEL #	DATE OF LAST CALIBRATION
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESHS 30	MAY, 1996
SPECTRUM ANALYZER	HP	8568B	MAR., 1996
SPECTRUM ANALYZER	HP	8593E	OCT., 1995
LISN	SOLAR	9252-50-R24-BNC	JULY, 1995
LISN	SOLAR	9252-50-R24-BNC	JULY, 1995
SIGNAL GENERATOR	ROHDE & SCHWARZ	SMT41	APR., 1996
TRANSIENT LIMITER	R&S	N/A	N/A
FREQUENCY CONVERTOR	APC	AFC-1KW	MAY, 1996

3.2 TEST PROCEDURE

THE EUT WAS TESTED ACCORDING TO EN55011. THE CONDUCTED TEST WAS PERFORMED IN AN ANECHOIC CHAMBER. THE FREQUENCY SPECTRUM FROM 0.15 MHz TO 30 MHz WAS INVESTIGATED. THE LISN USED WAS 50 ohm/50 uHenry AS SPECIFIED BY EN55011. CABLES AND PERIPHERALS WERE MOVED TO FIND THE MAXIMUM EMISSION LEVELS FOR EACH FREQUENCY.

3.3 TEST SETUP





3.4 CONFIGURATION OF THE EUT

THE EUT WAS CONFIGURED ACCORDING TO EN55011.ALL INTERFACE PORTS WERE CONNECTED TO THE APPROPRIATE PERIPHERALS. ALL PERIPHERALS AND CABLES ARE LISTED BELOW.

-EUT

DEVICE	MANUFACTURER	MODEL #
INDUSTRIAL PC	ASTECH TECHNOLOGY CO., LTD.	AMB-530, PIA-6436, MBC-263, PIA-6007, PIA-421

-PERIPHERALS

DEVICE	MANUFACTURER	MODEL# / SERIAL#
MONITOR	DTK	CDD-1410N
PRINTER	HP	2225C+
MODEM	SMARTEAM	103/212A
MODEM	HAYES	4007AM
KEYBOARD	ASTECH	PIA-421
MOUSE	N/A	N/A

- REMARK:

CASE : AMB-530
CPU CARD : PIA-6436
VGA CARD : MBC-263
SLOT BOARD : PIA-6007
KEYBOARD : PIA-421

3.4 CONFIGURATION OF THE EUT (CONTINUED)

-CABLES - ALL 1m OR GREATER IN LENGTH - BUNDLED ACCORDING TO EN55011.

MODEM*2	POWER CABLE	- UNSHIELDED
	DATA CABLE	- SHIELDED
MONITOR	POWER CABLE	- UNSHIELDED
	DATA CABLE	- UNSHIELDED
KEYBOARD	DATA CABLE	- SHIELDED
PRINTER	POWER CABLE	- UNSHIELDED
	DATA CABLE	- SHIELDED

-INTERNAL DEVICES

DEVICE	MANUFACTURER	MODEL #
CASE	ASTECH	AMB-530
CPU CARD	ASTECH	PIA-6436
VGA CARD	ASTECH	MBC-263
SLOT BOARD	ASTECH	PIA-6007

3.5 EUT OPERATING CONDITION

OPERATING CONDITION IS ACCORDING TO EN55011.

THE OPERATING SPEED OF THE COMPUTER WERE 50MHz

1. EUT POWER ON.
2. "H" PATTERN SENT TO THE FOLLOWING PERIPHERALS :
   - MONITOR
   - PRINTER
   - MODEM *2
3. CPU : 486DX4/100

3.6 CONDUCTED POWER LINE EMISSION LIMIT

CLASS A :

FREQUENCY RANGE (MHz)	QUASI PEAK	AVERAGE
0.15 - 0.5	76-66dBuV	66-56dBuV
0.5 - 5	66dBuV	56dBuV
5 - 30	70dBuV	60dBuV

NOTE : IN THE ABOVE TABLE, THE TIGHTER LIMIT APPLIES AT THE BAND EDGES.

3.7 CONDUCTED POWER LINE TEST RESULT

THE FREQUENCY SPECTRUM FROM 0.15 MHz TO 30 MHz WAS INVESTIGATED. ALL READINGS ARE QUASI-PEAK VALUES & AVERAGE WITH A RESOLUTION BANDWIDTH OF 9 KHZ.

TEMPERATURE : 28 C HUMIDITY : 78 %RH

QUASI-PEAK

FREQUENCY(MHz)	LINE1(dBuv)	LINE2(dBuv)	LIMIT(dBuv)
0.151	51.4	50.3	76.0
0.210	45.6	45.0	73.2
0.238	42.3	41.8	72.2
0.324	33.5	37.1	69.6
1.420	31.7	44.3	66.0
3.600	25.6	24.0	66.0
12.53	28.4	25.8	70.0
24.01	37.6	34.5	70.0

AVERAGE

FREQUENCY(MHz)	LINE1(dBuv)	LINE2(dBuv)	LIMIT(dBuv)
0.151	51.1	49.9	66.0
0.210	45.1	44.3	63.2
0.238	41.9	41.5	62.2
0.324	36.7	36.3	59.6
1.420	29.0	36.3	56.0
3.600	15.2	41.5	56.0
12.53	20.8	19.1	60.0
24.01	36.6	22.2	60.0

REMARKS :* = MEASUREMENT DOES NOT APPLY FOR THIS FREQUENCY

SIGNED BY TESTING ENGINEER : _____

3.8 PHOTOS

4. RADIATED EMISSION TEST

4.1 TEST EQUIPMENT

THE FOLLOWING TEST EQUIPMENT WAS USED DURING THE RADIATED EMISSION TEST :

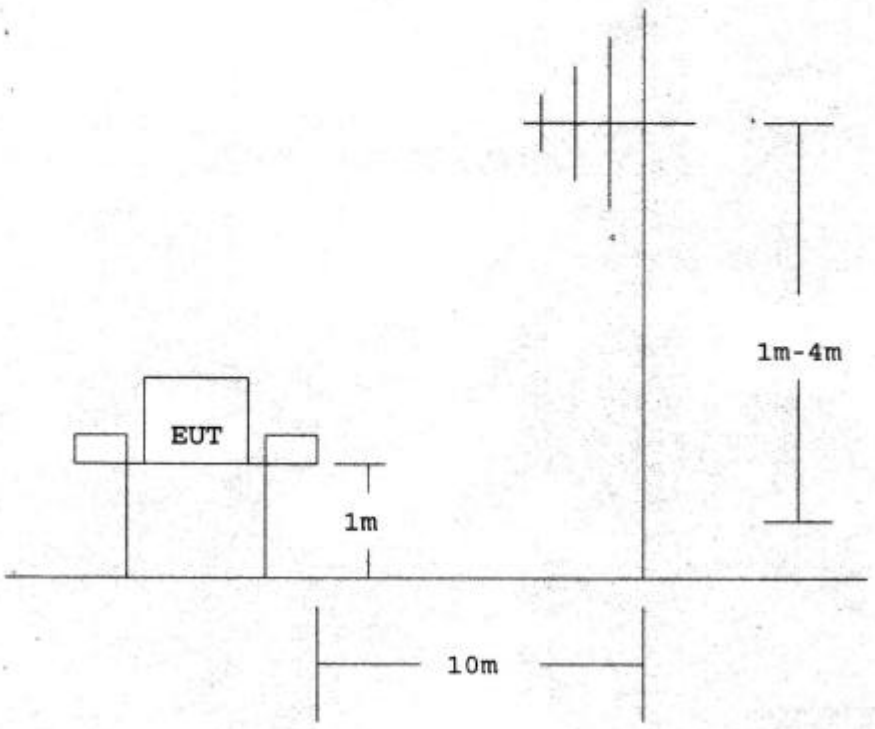
EQUIPMENT	Manufacturer	Model #	Cal.
Receiver	Rohde & Schwarz	ESVS30	JAN., 1996
Spectrum Analyzer	HP	8593E	OCT., 1995
Spectrum Analyzer	HP	8568B	MAR., 1996
Pre-Amplifier	HP	8447D	AUG., 1995
Signal Generator	HP	8640B	MAR., 1996
Signal Generator	Rohde & Schwarz	SMY01	APR., 1996
Dipole Antenna	EMCO	3121C	DEC., 1995
Dipole Antenna	EMCO	3121C	DEC., 1995
Bi-Log Antenna	EMCO	3143	JUN., 1995
Bi-Log Antenna	EMCO	3143	JUN., 1995
Horn Antenna	EMCO	3115	MAY., 1996
Loop Antenna	Rohde & Schwarz	HFHz - Zz	N/A
ANECHOIC CHAMBER	SRT	SRT-CA1	MAY., 1996
OPEN SITE	SRT	SRT-CO1	MAY., 1996

4.2 TEST PROCEDURE

THE EUT WAS TESTED ACCORDING TO EN55011. THE RADIATED TEST WAS PERFORMED AT SRT LAB's OPEN SITE. THIS SITE IS ON FILE WITH THE FCC LABORATORY DIVISION, REFERENCE 31040/SIT.

THE FREQUENCY SPECTRUM FROM 30 MHz TO 1 GHz WAS INVESTIGATED. MEASUREMENT WERE MADE AT TEN METERS WITH AN ADJUSTABLE DIPOLE ANTENNA. PERIPHERALS, CABLES, EUT ORIENTATION, AND ANTENNA HEIGHT WERE VARIED TO FIND THE MAXIMUM EMISSION FOR EACH FREQUENCY.

4.3 TEST SET-UP



4.4 CONFIGURATION OF THE EUT

SAME AS SECTION 3.4 OF THIS REPORT.

4.5 EUT OPERATING CONDITION

SAME AS SECTION 3.5 OF THIS REPORT.

4.6 RADIATED EMISSION LIMIT

ALL EMISSION FROM A DIGITAL DEVICE, INCLUDING ANY NETWORK OF CONDUCTORS AND APPARATUS CONNECTED THERETO, SHALL NOT EXCEED THE LEVEL OF FIELD STRENGTH SPECIFIED BELOW :

CLASS A

FREQUENCY (MHz)	DISTANCE (m)	FIELD STRENGTH (dBuV/m)
30 - 230	10	40
230 -1000	10	47

NOTE : 1. IN THE EMISSION TABLES ABOVE, THE TIGHTER LIMIT APPLIES AT THE BAND EDGES.

2. DISTANCE REFERS TO THE DISTANCE BETWEEN MEASURING INSTRUMENT, ANTENNA, AND THE CLOSEST POINT OF ANY PART OF THE DEVICE OR SYSTEM.

4.7 RADIATED EMISSION TEST RESULT

THE FREQUENCY SPECTRUM FROM 30 MHz TO 1 GHz WAS INVESTIGATED. ALL READINGS ARE QUASI-PEAK VALUES WITH A RESOLUTION BANDWIDTH OF 120 KHZ. MEASUREMENT WERE MADE AT 10 METERS.
TEMPERATURE : 28 C

HUMIDITY : 78 %RH

FREQ. (MHz)	CABLE LOSS (dB)	ANT. FACTOR (dB)	READING(dBuV)		EMISSION(dBuV)		LMTS (dBuV)
			HORIZ	VERT	HORIZ	VERT	
76.1	1.1	8.0	24.5	23.9	33.6	33.0	40
97.9	1.2	7.6	24.7	*	33.5	*	40
114.9	1.3	7.1	27.7	27.1	36.1	35.5	40
168.2	1.6	9.0	23.8	25.0	34.4	35.6	40
209.5	1.7	10.3	21.7	*	33.7	*	40
265.0	2.0	12.6	29.0	*	43.6	*	47
313.7	2.2	14.6	27.1	21.0	43.9	37.8	47
367.1	2.2	14.9	16.6	16.4	33.7	33.5	47
401.0	2.2	15.6	15.0	14.0	32.8	31.8	47
505.3	2.7	17.3	12.6	18.6	32.6	38.6	47

REMARKS : * = MEASUREMENT DOES NOT APPLY FOR THIS FREQUENCY

SIGNED BY TESTING ENGINEER : 

5. HARMONICS TEST

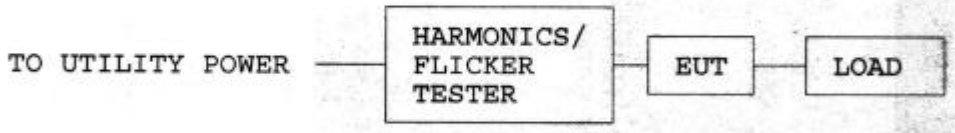
5.1 TEST EQUIPMENT

EQUIPMENT/ FACILITIES	MANUFACTURER	MODEL #	DATE OF LAST CALIBRATION
MAIN UNIT	HP	6843A	N/A
CONTROL PC	IBM	350-P75	N/A

5.2 TEST PROCEDURE

ACCORDING TO IEC 555-2

5.3 TEST SET-UP



5.4 CONFIGURATION OF THE EUT

THE SAME AS 3.4

5.5 EUT OPERATION CONDITION

THE SAME AS 3.5

4.8 PHOTOS

5.6 LIMIT

EVEN HARMONIC		ODD HARMONIC	
HARMONICS ORDER	LIMIT (Amp.)	HARMONICS ORDER	LIMIT (Amp.)
2	1.08	3	2.30
4	0.43	5	1.14
6	0.30	7	0.77
8<n<40	0.23 * 8 / n	9	0.40
		11	0.33
		13	0.21
		15<n<39	0.15 * 8 /n

5.7 SUMMARY OF TEST RESULT

* TEMPERATURE : 28 C

* HUMIDILITY : 78 %RH

FINAL TEST RESULT : PASS

5.8 PHOTOS

6. VOLTAGE FLUCTUATIONS

6.1 TEST EQUIPMENT

EQUIPMENT/ FACILITIES	MANUFACTURER	MODEL #	DATE OF LAST CALIBRATION
MAIN UNIT	HP	6843A	N/A
CONTROL PC	IBM	350-P75	N/A

6.2 TEST PROCEDURE

ACCORDING TO IEC 555-3

6.3 TEST SET-UP

THE SAME AS 5.3

6.4 CONFIGURATION OF THE EUT

THE SAME AS 3.4

6.5 EUT OPERATION CONDITION

THE SAME AS 3.5

6.6 LIMIT

SHORT-TERM FLICKER(Pst) : Pst : 1.0

LONG-TERM FLICKER(Plt) : Plt : 0.65

RELATIVE STEADY-STATE VOLTAGE CHANGE (Dc) :
Dc <=3%

RELATIVE VOLTAGE CHANGE CHARACTERISTIC (D(t)) :
D(t) > 3%

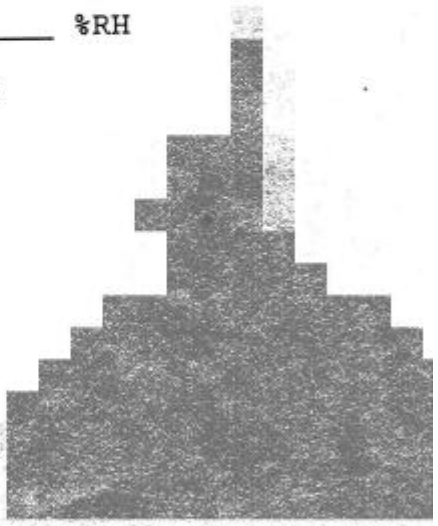
MAXIMUM RELATIVE VOLTAGE CHANGE (Dmax) :
Dmax <=4%

6.7 SUMMARY OF TEST RESULT

* TEMPERATURE : 28 C

* HUMIDILITY : 78 %RH

FINAL TEST RESULT : PASS



7. ELECTROSTATIC DISCHARGE IMMUNITY TEST

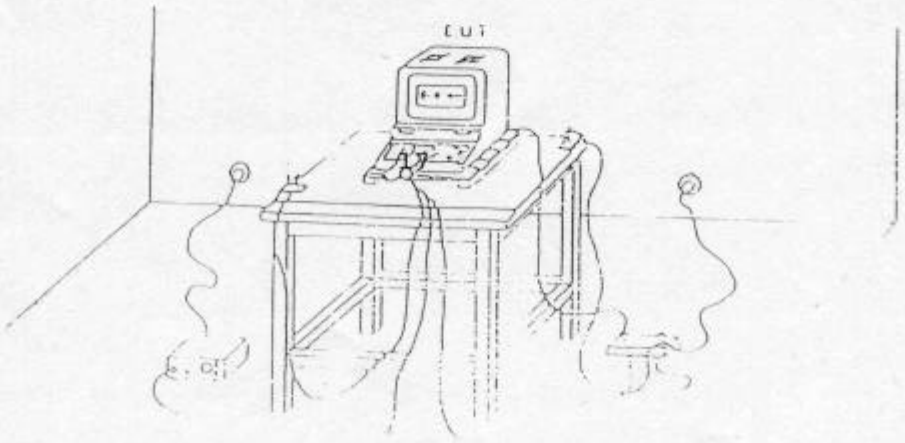
7.1 TEST EQUIPMENT

EQUIPMENT/ FACILITIES	MANUFACTURER	MODEL #	DATE OF LAST CALIBRATION
ESD MAIN UNIT	HAEFELY	PSD25B	JUN.,1995
ESD GUN	HAEFELY	AIR DISCHARGE	JUN.,1995
ESD GUN	HAEFELY	DIRECTLY CONTACT	JUN.,1995
VERTICAL PANEL	SRT	SRT ESD 1	N/A

7.2 TEST PROCEDURE

ACCORDING TO IEC 801-2

7.3 TEST SET-UP



6.8 PHOTOS

7.4 CONFIGURATION OF THE EUT

THE SAME AS 3.4

7.5 EUT OPERATION CONDITION

THE SAME AS 3.5

7.6 TEST CONDITION / PERFORMANCE CRITERIA

. SOURCE VOLTAGE AND FREQUENCY: 220V/50Hz, SINGLE PHASE
. R-C NETWORK: 330ohm , 150pF
. TEST LEVEL:
  AIR DISCHARGE: 2, 4, 8, 15KV
  CONTACT DISCHARGE: 2, 4, 6, 8KV
. NUMBER OF TEST: 12 DISCHARGE / LEVEL
. TIME BETWEEN TEST: 1 SEC

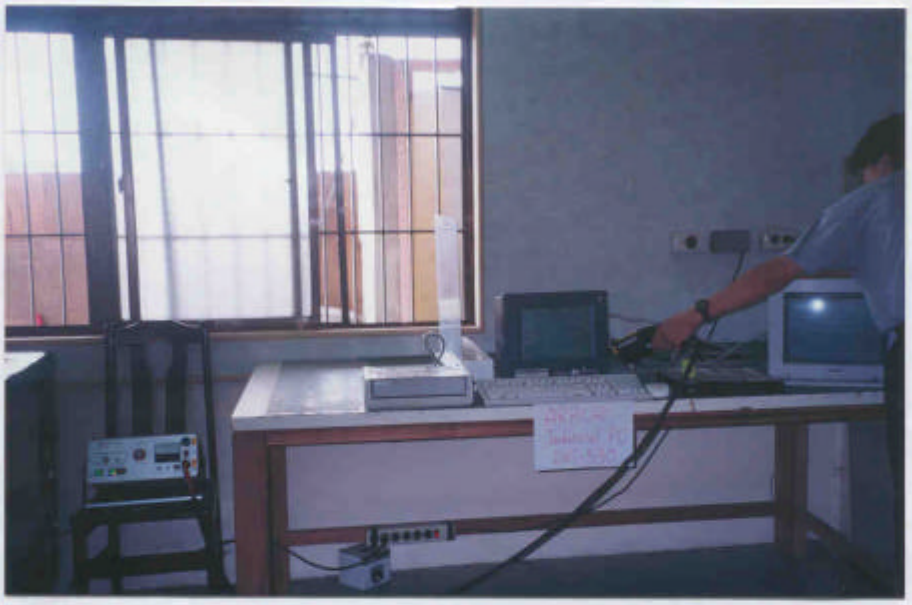
(A). NORMAL PERFORMANCE WITHIN THE SPECIFICATION.
(B). TEMPORARY DEGRADATION OR LOSS FUNCTION OR PERFORMANCE WHICH IS SELF-RECOVERABLE.
(C). TEMPORARY DEGRADATION OR LOSS FUNCTION OR PERFORMANCE WHICH REQUIRES OPERATOR INTERVENTION SYSTEM RESET.
(D). DEGRADATION OR LOSS FUNCTION WHICH IS NOT RECOVERABLE DUE TO DAMAGE OF EUT OR SOFTWARE, OR LOSS OF DATA.

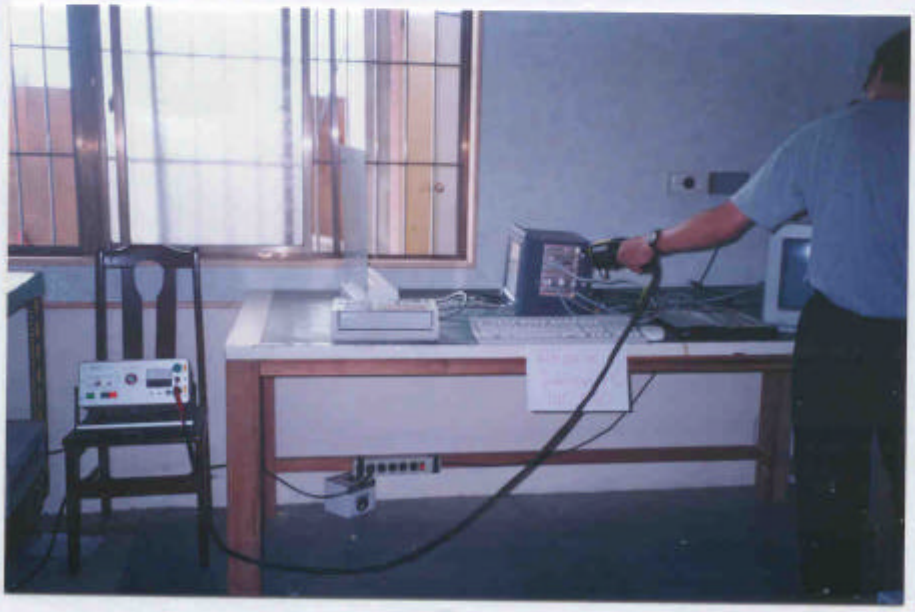
7.7 SUMMARY OF TEST RESULT

* TEMPERATURE
* HUMIDILITY

SEVERITY LEVEL	prEN55024-b REQUIREMENT		PERFORMANCE VERIFICATION		
COUPLING MODE	AIR DISCHARGE	CONTACT DISCHARGE	AIR DISCHARGE	CONTACT DISCHARGE	TEST RESULT
2	A	A	A	A	PASS
4	A	A	A	A	PASS
8	A	A	A	A	PASS
15	A	NR	A	NR	PASS

7.8 PHOTOS





8. RADIATED IMMUNITY TEST

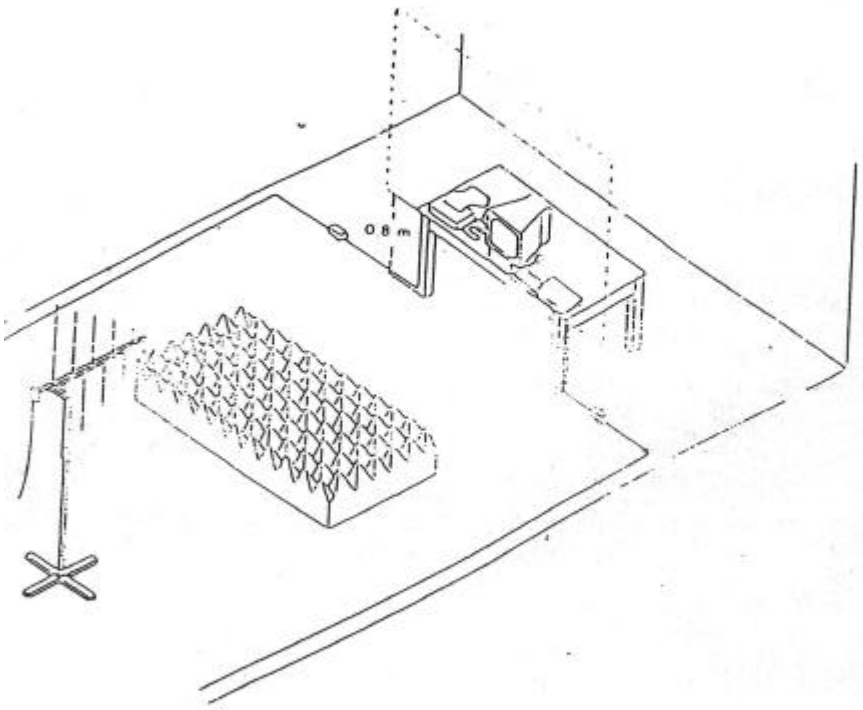
8.1 TEST EQUIPMENT

EQUIPMENT/ FACILITIES	MANUFACTURER	MODEL #	DATE OF LAST CALIBRATION
SIGNAL GENERATOR	HP	8640B	MAR.,1996
SIGNAL GENERATOR	Rohde & Schwarz	SMY01	APR.,1996
POWER AMPLIFIER	Amplifier Research	30W1000M7	AUG.,1995
POWER AMPLIFIER	ENI	A-300	DEC.,1995
ANTENNA	EMCO	3143	JUN.,1995
ANTENNA	EMCO	3143	JUN.,1995
FIELD SERSOR	Amplifier Research	FP2000	AUG.,1995
VOLTAGE MONITOR	Amplifier Research	FM2000	AUG.,1995
ANECHOIC CHAMBER	SRT	SRT03	JUN.,1996

8.2 TEST PROCEDURE

ACCORDING TO IEC 801-3

8.3 TEST SET-UP



Example of test set-up for table-top Equipment

8.4 CONFIGURATION OF THE EUT

THE SAME AS 3.4

8.5 EUT OPERATION CONDITION

THE SAME AS 3.5

8.6 TEST CONDITION / PERFORMANCE CRITERIA

. SOURCE VOLTAGE AND FREQUENCY: 220V/50Hz, SINGLE PHASE
. SWEEPING FREQUENCY: 27MHz - 500MHz
. TEST LEVEL: 3V/m, THE FREQUENCY STEP IS 1%
. THE FOUR SIDES OF EUT ARE TESTED (FRONT, REAR, LEFT, RIGHT)
. ANTENNA POLARITY: HORIZONTAL AND VERTICAL POLARIZATION

(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.

8.7 SUMMARY OF TEST RESULT

* TEMPERATURE
* HUMIDILITY
* SEVERITY LEVEL: 3V/m
* prEN55024-b REQUIREMENT: A
* PERFORMANCE VERIFICATION: A
* TEST RESULTS: PASS

8.8 PHOTOS

9. RADIATED IMMUNITY TEST

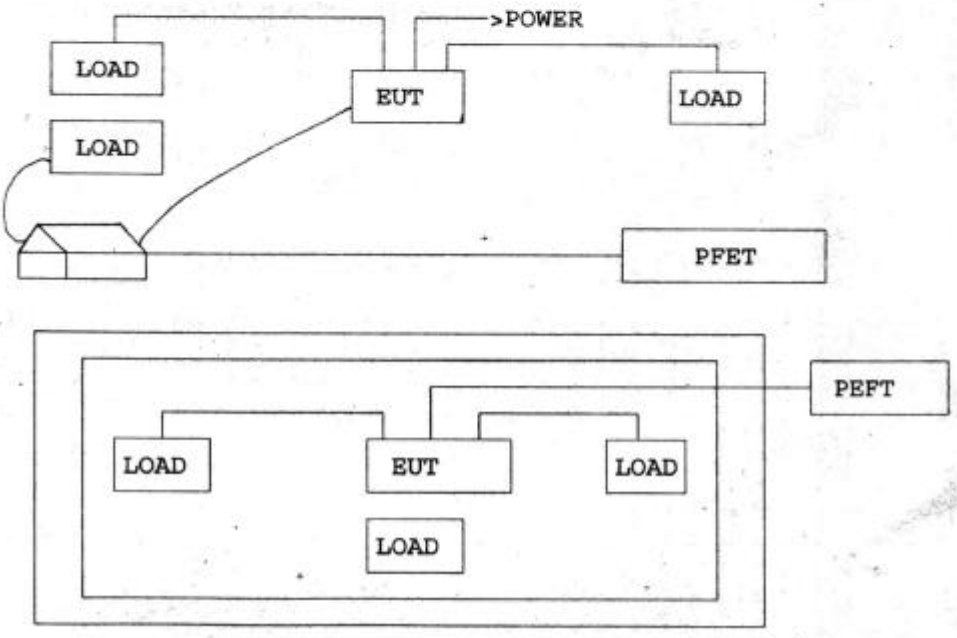
9.1 TEST EQUIPMENT

EQUIPMENT/ FACILITIES	MANUFACTURER	MODEL #	DATE OF LAST CALIBRATION
CONTROL UNIT	HAEFELY	P90.1	JUN.,1995
BURST-TESTER	HAEFELY	PEFT.1	JUN.,1995
HV-UNIT	HAEFELY	PHV41.24A	JUN.,1995
COUPLING-CLAMP	HAEFELY	IP4A	JUN.,1995
ADAPTER SET	HAEFELY	N/A	N/A

9.2 TEST PROCEDURE

ACCORDING TO IEC 801-4

9.3 TEST SET-UP



9.4 CONFIGURATION OF THE EUT

THE SAME AS 3.4

9.5 EUT OPERATION CONDITION

THE SAME AS 3.5

9.6 TEST CONDITION / PERFORMANCE CRITERIA

. SOURCE VOLTAGE AND FREQUENCY: 220V/50Hz, SINGLE PHASE
. PULSE RISETIME AND DURATION: 5ns/50ns
. PULSE REPETITION: 5KHz
. POLARITY: POSITIVE / NEGATIVE. LEA
. BURST DURATION AND PERIOD: 15ms / 300ms
. TEST DURATION: 2 Min
. TIME BETWEEN TEST: 10 sec
. SEVERITY LEVELS: +/-0.5KV, +/-1KV, +/-2KV
. COUPLING OF POWER LINE: L, N, PE, L+N,L+PE+N, L+PE, N+PE
. COUPLING OF DATA LINE

(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 OR SYSTEM RESET.
(D). DEGRADATION OR LOSS FUNCTION WHICH IS NOT RECOVERABLE DUE TO DAMAGE OF EUT OR SOFTWARE, OR LOSS OF DATA.

9.7 SUMMARY OF TEST RESULT

* TEMPERATURE
* HUMIDILITY

SEVERITY LEVEL (KV)	prEN55024-b REQUIREMENT (criteria)	PERFORMANCE VERIFICATION (criteria)	TEST RESULTS
+/-0.5KV	A	A	PASS
+/-1KV	A	A	PASS
+/-2KV	A	A	PASS

9.8 PHOTOS

Spectrum Research & Testing Lab. Report:#CE960520
MODEL:AMB-530,PIA-6436,MBC-263,PIA-6007,PIA-421

*. PHOTOS

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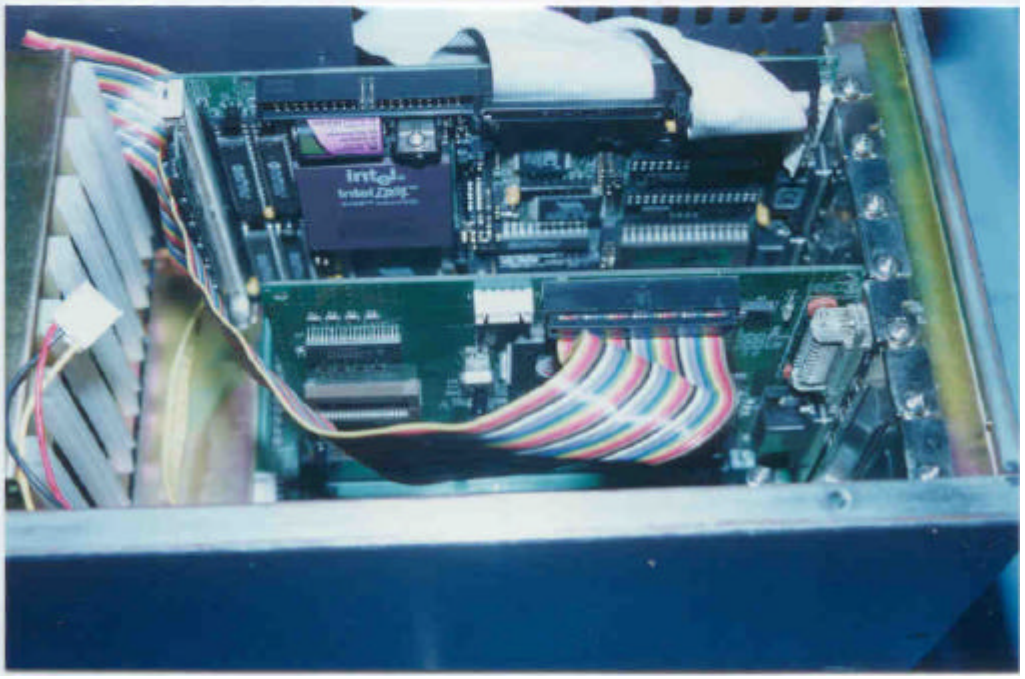

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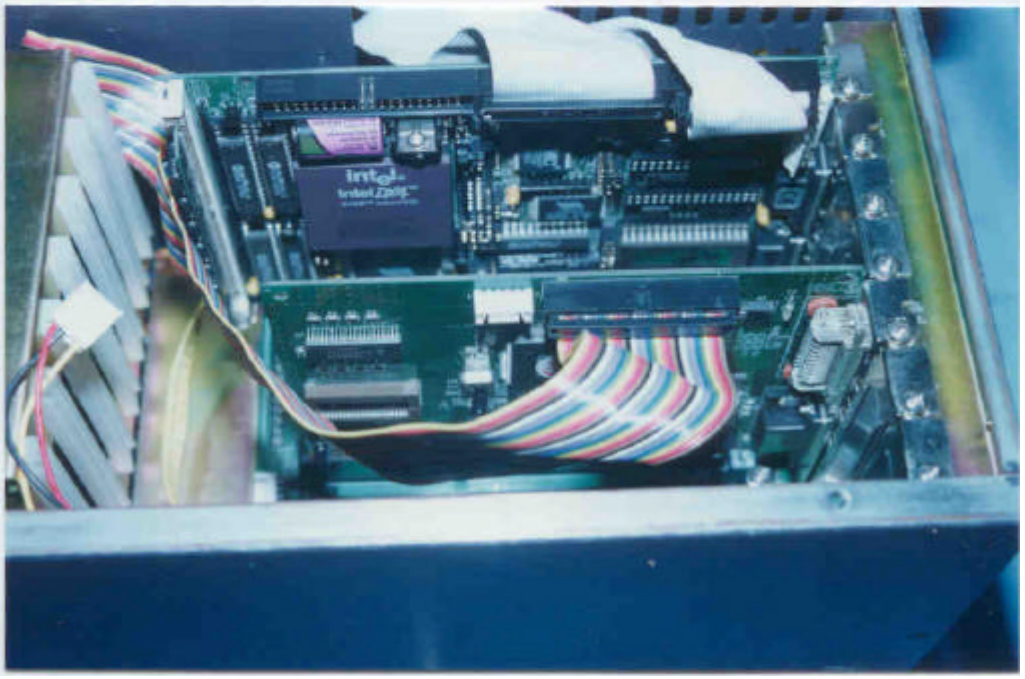

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