TRC
Certificate of Compliance

Training Research Co., Ltd.
hereby certifies that

EMC TEST
Socket 370 CPU Board
Model No.: PCM-9570, PCM-9570S

Made by
Advantech Co., Ltd.
Fl.2, No. 108-3, Ming-Chuan Road,
Shing-Tien City, Taipei , Taiwan, R.O.C.

is fulfilled

EMI: EN50081-1/1994→EN55022/1995, EN 61000-3-2/1995, EN 61000-3-3/1995
EMS: EN50082-1/1994→IEC1000-4-2/1995, IEC 1000-4-3/1997, ENV 50204/1996, IEC1000-4-4/1995, IEC1000-4-5/1995, IEC1000-4-6/1996, IEC1000-4-8/1994, IEC1000-4-11/1996,

Test Date: Aug. 30, 1999
Certificate Registration No.: A55CE674

Sep. 06, 1999

Frank Tsai

General Manager, Frank Tsai

Training Research Co., Ltd. (NVLAP LAB CODE: 200174-0)

Report No.	A55CE674
Specifications	EMC
Applicant address	Fl.2, No.108-3, Ming-Chuan Road, Shing-Tien City, Taipei, Taiwan
Applicant Items tested Model No.	Advantech Co., Ltd. Socket 370 CPU Board PCM-9570, PCM-9570S (Sample # A55674)
Results Sample received date	**Compliance** (As detailed within this report) 08/23/1999 (month / day / year)
Prepared by	project engineer
Authorized by	General Manager (Frank Tsai)
Issue date	*Sep. 06, 1999* (month / day / year)
Modifications	**None**
Tested by Office at Open site at	Training Research Co., Ltd. 2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan No. 5-3, Lane 21, Yen Chiu Yuan Rd., Sec. 4, Taipei, Taiwan

Conditions of issue:

(1) ***This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.***

(2) ***This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.***

(3) ***This test report, measurements made by TRC are traceable to the NIST only Conducted and Radiated Method.***

★ ***NVLAP LAB CODE: 200174-0***

Chapter 0 Emission and Susceptibility Standards

Emission Standards

Emission Standard	European Standard	International Standard
(X)	EN 50081-1/1994	
( )	EN 50081-1/8.93	
( )	EN 55014/4.93	CISPR 14: 1993
( )	EN 55015/12.93	CISPR 15: 1992
( )	EN 55011/91	CISPR 11: 1990
(X)	EN 55022/95	CISPR 22: 1993
(X)	EN 61000-3-2/1995	IEC 1000-3-2: 1995
(X)	EN 61000-3-3/1995	IEC 1000-3-3: 1994

Susceptibility Standards

Susceptibility Standard	European Standard	International Standard
(X)	EN 50082-1/1994	
( )	EN 50082-1/1992	
( )	EN 50082-2/1994	
( )		IEC 801-2/1984
( )		IEC 801-3/1984
( )		IEC 801-4/1988
( )		IEC 804-5
(X)	ENV 50140/50204:1993/1996	IEC 1000-4-3
(X)	EN 61000-4-2:1995	IEC 1000-4-2
(X)	EN 61000-4-4:1995	IEC 1000-4-4
(X)	ENV 50142:1995	IEC 1000-4-5
(X)	ENV 50141:1996	IEC 1000-4-6
(X)	EN 61000-4-8:1994	IEC 1000-4-8
(X)	EN 61000-4-11:1996	IEC 1000-4-11
( )	EN 55014-2:1993	CISPR/F (Sec) 159
( )		

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Chapter 1 Introduction

Description of EUT:

The EUT is designed for use in the industrial environment. The CPU of EUT is Intel Celeron 300. It has two USB connectors, one Ethernet connector, four RS-232 connectors, one keyboard connector, one mouse connector, one printer port and one VGA connector. For more information, please refer to the user's manual.

The difference between the model: PCM-9570 and PCM-9570S is that there is no SCSI interface with PCM-9570.

Connections of EUT:

(1)Put the EUT into a metal IPC case and screw it.

(2)HDD jack of EUT is connected with a hard disk.

(3)DIMM jack of EUT is connected with a 144pin SDRAM.

(4)A Intel Celeron 300 was plugged into the CPU Socket of EUT.

(5)Keyboard port of EUT is connected with a keyboard.

(6)Mouse port of EUT is connected with a mouse.

(7)Ethernet connector connects with a RJ-45 cable.

(8)One serial port of EUT is connected with one external modem.

(9)The Other three serial ports of EUT are connected with three RS-232 cables.

(10)USB A port of EUT connects with USB joystick.

(11)USB B port of EUT connects with USB mouse.

(12)The VGA connector of EUT connects with a monitor.

(13)The printer port of EUT connects with a printer.

Test method:

During the measurement, only the model: PCN-9570 was tested.

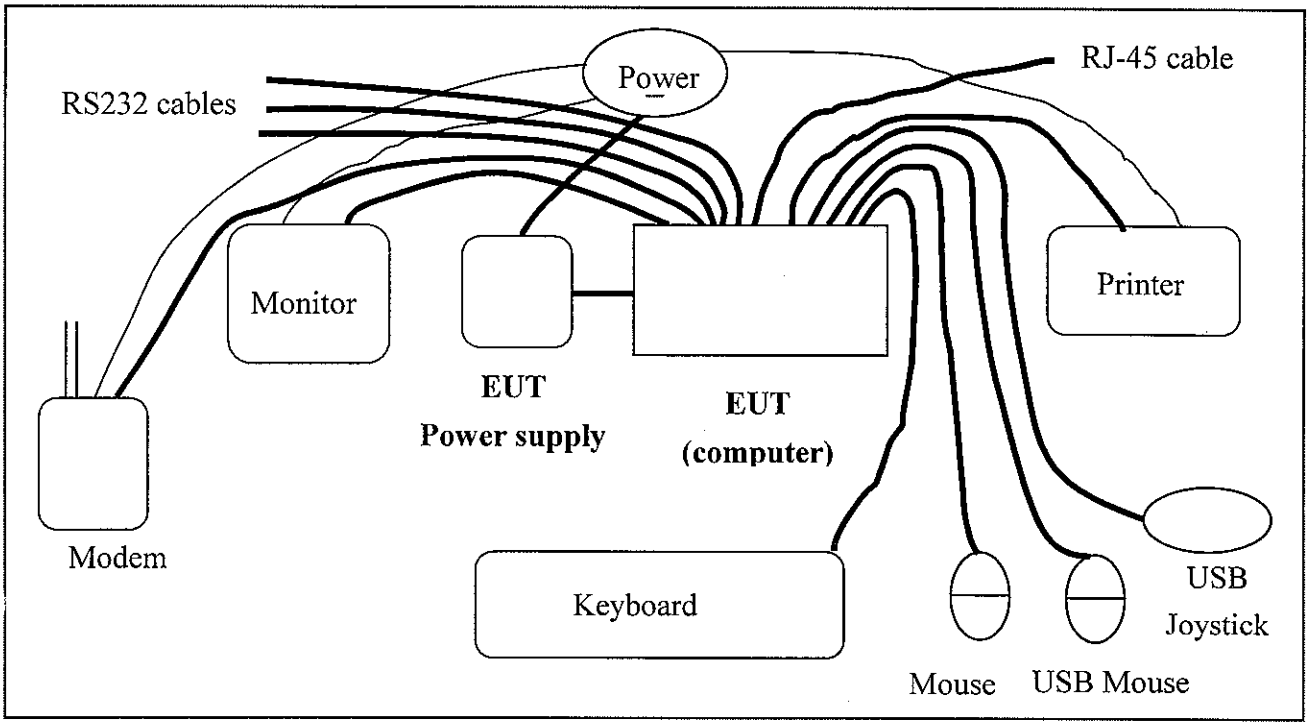
Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

While testing, the system board was operated by the software that applicant provides. The system sends" H " pattern to monitor and monitor display " H " pattern on screen. It also sends " H " pattern to two modems. This software will enable all functions.

The test placement as the photographs showed is the worst case emission placed. (If the emission is close to the ambient, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

The testing configuration of test setup is showing in the next page.

Configuration of test setup



Connections:

EUT:

*Serial A port --- via a 76 cm long, non-shielded, RS-232 cable to a external modem.

*Serial B port --- one RS232 cable with 1m long, shielded, no ferrite core.

*Serial C, D port --- two RS232 cables with 1m long, non-shielded, no ferrite core.

*Printer port --- via a 1.2m long, non-shielded, no ferrite bead, printer cable to a printer

* Keyboard port --- a Keyboard with 1m length data cable

* Mouse port --- a mouse with 1m length data cable

* Monitor port --- a monitor with 0.7m long, shielded, with ferrite core data cable

* RJ-45 port --- a RJ-45 cable with 1m long, non-shielded, no ferrite core.

*USB A port --- the joystick with 1.7m long, shielded and no ferrite bead data cable

*USB B port --- the mouse with 1m long, shielded and no ferrite bead data cable

*Female port of power connector --- via 10 cm long, shielded, with ferrite core power cable to the male port of power connector

*Power port --- via a 1.8m long, non-shielded, no ferrite bead power cable to the AC power source.

(Each port on PC is connected with suitable device)

REMARK:

(1) There is a ferrite core (Crown Ferrite Enterprises, Co., CF-130 (B)) winded one turn on the power cable that from power supply to the power jack of IPC case.

List of support equipment:

Conducted (Radiated) test:

Monitor	:	**CHUNTEX ELECTRONIC CO., LTD.**
Model No.	:	1792UA
Serial No.	:	0S0-84300157
FCC ID	:	DBL1792UA
Power type	:	110VAC, Switching
Power cord	:	Non-Shielded, 3m long , no ferrite core
Data cable	:	Shielded, 1.8m long , with 2 ferrite cores
Keyboard	:	**HP**
Model No.	:	SK-2501K
Serial No.	:	M981236131 (M981216213)
FCC ID	:	GYUR38SK
檢磁	:	3862A621
Power type	:	By PC
Data cable	:	Shielded, 1.70m long, with ferrite core
Printer	:	**EPSON**
Model No.	:	P78PA (P70RA)
Serial No.	:	0EE0014030 (10010386)
FCC ID	:	BKM9A8P70RA
Power type	:	Linear
Power cord	:	Non-shielded, 2m long, No ferrite core
Data cable	:	Shielded, 1.84m long, No ferrite core (1.7m)

Modem	:	**ACEEX 9624 External Fax / Modem**
Model No.	:	XDM-9624
Serial No.	:	N / A
FCC ID	:	IFAXDM-9624
Power Type	:	Linear
Power Cord	:	Non-shielded, 5.5' long, Plastic hoods, and no ferrite bead
Data Cable	:	RS-232→Shielded, 3' long, Metal hoods , No bead
		RJ-11C→Non-shielded, 7'long, Plastic hoods, No bead

Mouse	:	**HP**
Model No.	:	M-S34
Serial No.	:	LZC84446151 (LZB90910462)
FCC ID	:	DZL211029
檢磁	:	4862A011
Power type	:	By PC
Power cord	:	Non-shielded, 1.80m long, No ferrite core

USB Joystick	:	**Padix**
Model No.	:	QF-305U, QF-307U, QF-606U, QF-707U (Doc Approval)
Power type	:	Powered by PC
Power Cable	:	Shielded, 1.5M long, No ferrite bead data cable

USB Mouse	:	**Chic Technology Corporation (Logitech)**
Model No.	:	CM-USB (M-BA47)
Serial No.	:	N/A (LZE92250027)
FCC ID	:	IOWCM-USB (Doc Approved)
Power type	:	Powered by PC
Power Cable	:	Shielded. 1.8M long, Plastic hoods, No ferrite bead

IPC case	:	**Advantech**
Model No.	:	MBPC-300

H.D.D.	:	**TravelStar**
Model No.	:	DBCA-203240
Serial No.	:	HPB 07144
Power type	:	By PC
Data cable	:	Non-shielded, 45cm long, with no ferrite core

Chapter 2 Conducted emission test

Test condition and setup:

All the equipment is placed and setup according to the EN 55022.
The EUT is assembled on a wooden table which is 80 cm high, is placed 40 cm from the back-wall which is a vertical conducting plane. One LISN is for EUT, the other LISN is for support equipment. They are all placed on the conductive ground. The EUT's LISN connect a line switch box for selecting L1 or L2, then connect to a preamplifier and spectrum.

The spectrum scans from 150KHz to 30MHz. Conducted emission levels are detected at max. peak mode. But if the max. peak mode failed or over average limit, it will be measured by average detection mode.

While testing, there is the worst-emission plot printed at peak detection mode, and there are more than 6 highest emissions relative to limit recorded. The plot is kept as the original data, not included in test report.

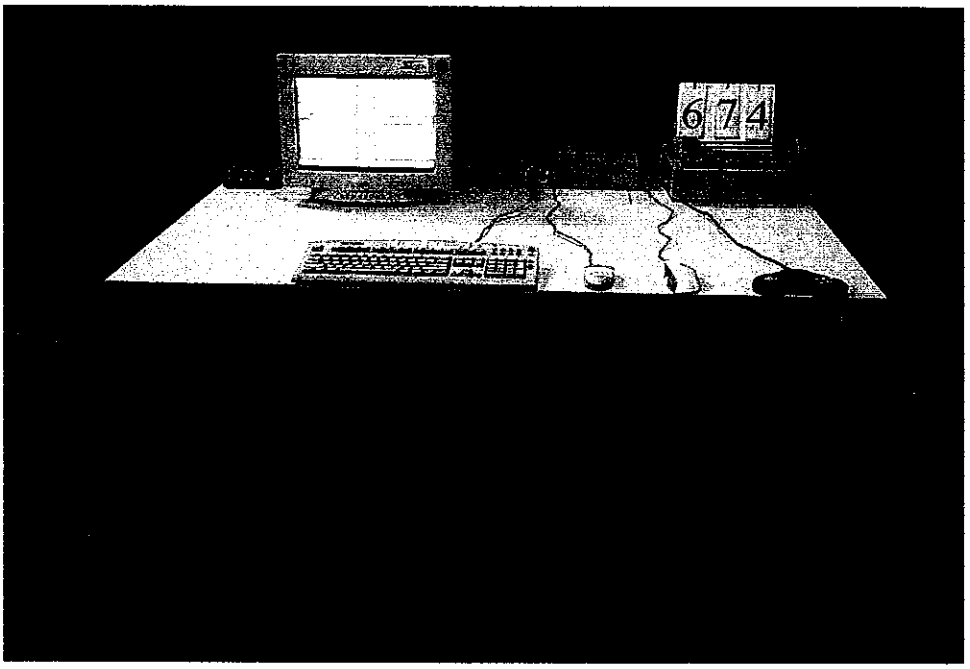
List of test Instrument:

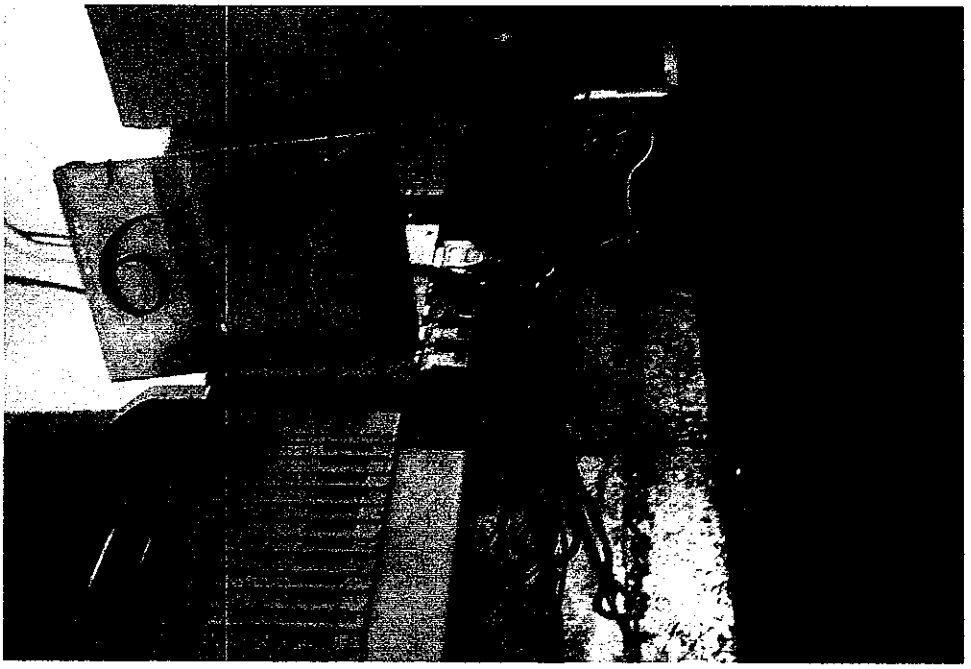
				Calibration Date	
Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
Spectrum analyzer	8591EM	H P	3619A00821	10/29/98	10/29/99
LISN (EUT)	3825/2	EMCO	9411-2284	05/20/99	05/20/00
LISN (Support E.)	3825/2	EMCO	9210-2007	05/20/99	05/20/00
Preamplifier	8447F	H P	2944A03706	05/20/99	05/20/00
Line switch box	AC1-003	TRC	---------	05/20/99	05/20/00
Line selector	AC1-002	TRC	---------	05/20/99	05/20/00

The level of confidence of 95%, the uncertainty of measurement of conducted emission is ± 2.4 dB.

Test Result: Pass (Appendix A)

Conducted Test Placement: (Photographs)





Chapter 3 Radiated emission test

Test condition and setup:

Pretest: Prior to the final test (OATS test), the EUT is placed in a shielded enclosure, and scan from 30MHz to 1GHz. This is done to ensure the radiation is exactly emitted from the EUT.

Final test: Final radiation measurement is made on a **10 – meter,** open-field test site. The EUT is placed on a nonconductive table that is 0.8m height, the top surface is 1.0 x 1.5 meter. The placement is according to EN 55022.

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The M.E. whole range Antenna is used to measure frequency from 30 MHz to 1GHz. The final test is used the spectrum analyzer.

Measure more than six top marked frequencies generated form pretest by computer step by step at each frequency. The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meters to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading .The spectrum analyzer's 6dB bandwidth is set to 120 K Hz, and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient, the tester will recheck the data and the corrected data will be written in the test data sheet. If the emission is just within the ambient, the data from shielded room will be taken as the final data.

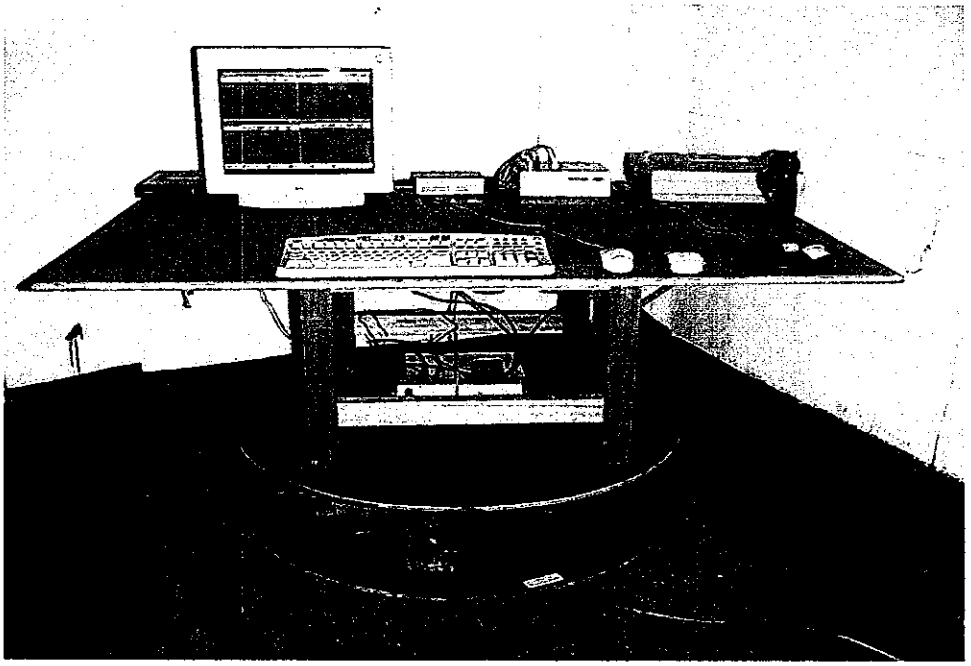
List of test Instrument:

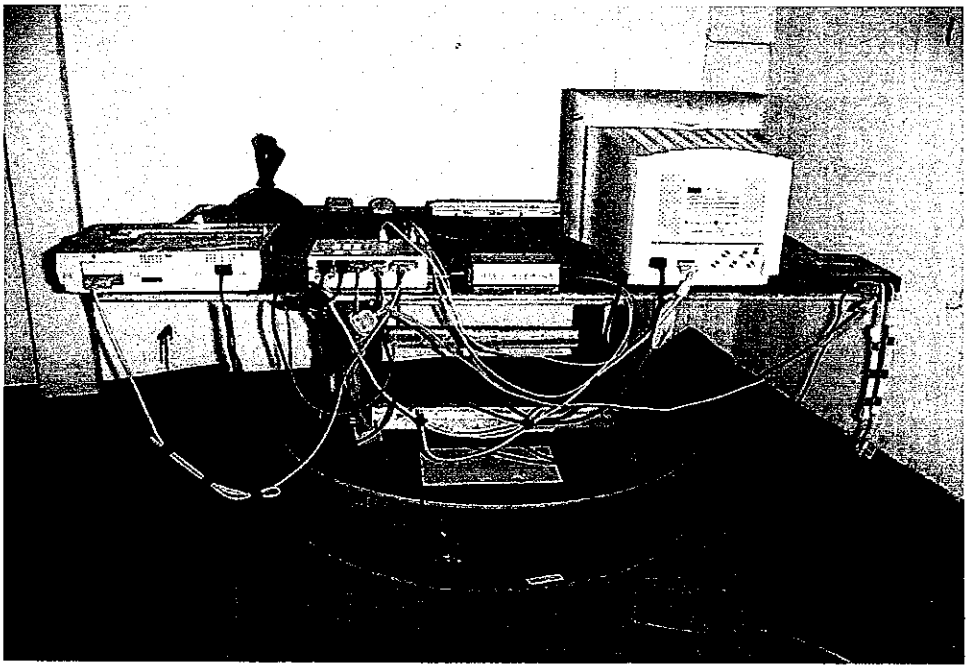
				Calibration Date	
Instrument name	Model No.	Brand	Serial No.	Last	Next
Spectrum analyzer	8591EM	H P	3710A01203	01/29/99	01/29/00
Spectrum analyzer	8568B	H P	3004A18617	05/18/99	05/18/00
Quasi-peak Adapter	85650A	H P	2521A00984	05/18/99	05/18/00
RF Pre-selector	85685A	H P	2947A01011	05/18/99	05/18/00
Antenna (30M-1.5G Hz)	VULB 9160	M.E.	3064	01/20/99	01/20/00
Open test side (Antenna, Amplify, cable calibrated together)				05/20/99	05/20/00

The level of confidence of 95%, the uncertainty of measurement of radiated emission is ± 4.96 dB.

Test Result: Pass (Appendix B)

Radiated Test Placement: (Photographs)





Chapter 4 Radio Frequency Immunity Test (RS)

Test information:

Test setup: According to IEC 1000-4-3 / ENV 50204

Test Frequency: (X) 80 ~ 1000 MHz

( ) 27 ~ 500 MHz Without Modulation

Modulation: ( ) FM %

(X) 80% AM Modulation with 1KHz

(X) 900 MHz±5 MHz with PM 200 Hz and 50% duty cycle

Step size: (X) ≦1% step size

Sweep time: (X) 2.5 Second

Field strength: ( ) 1V/m (X) 3V/m ( ) 10V/m

Test mode: Ref. Test method of Chapter 1

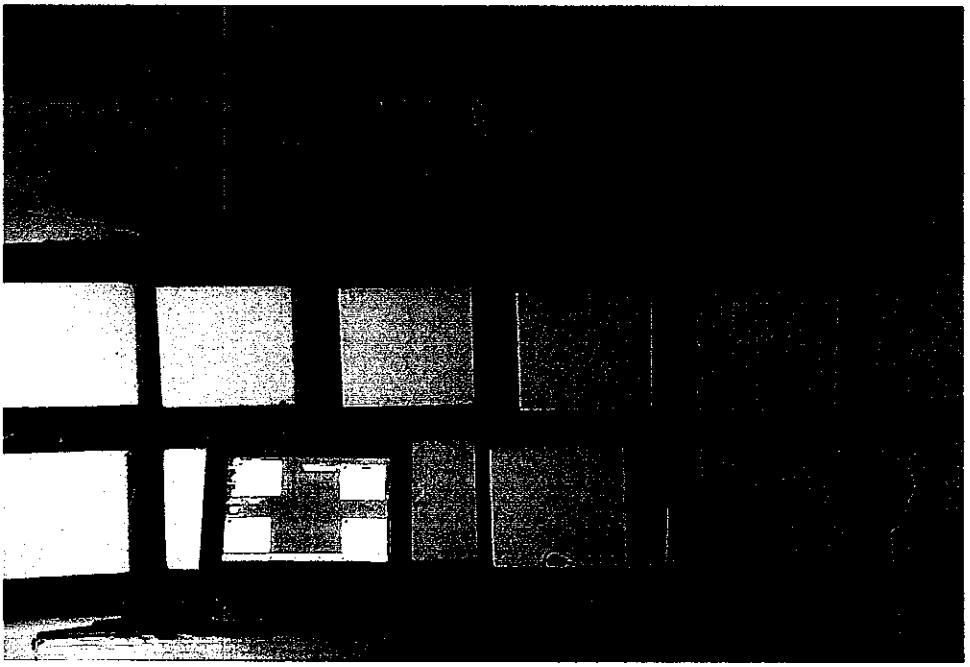
Test instruments:

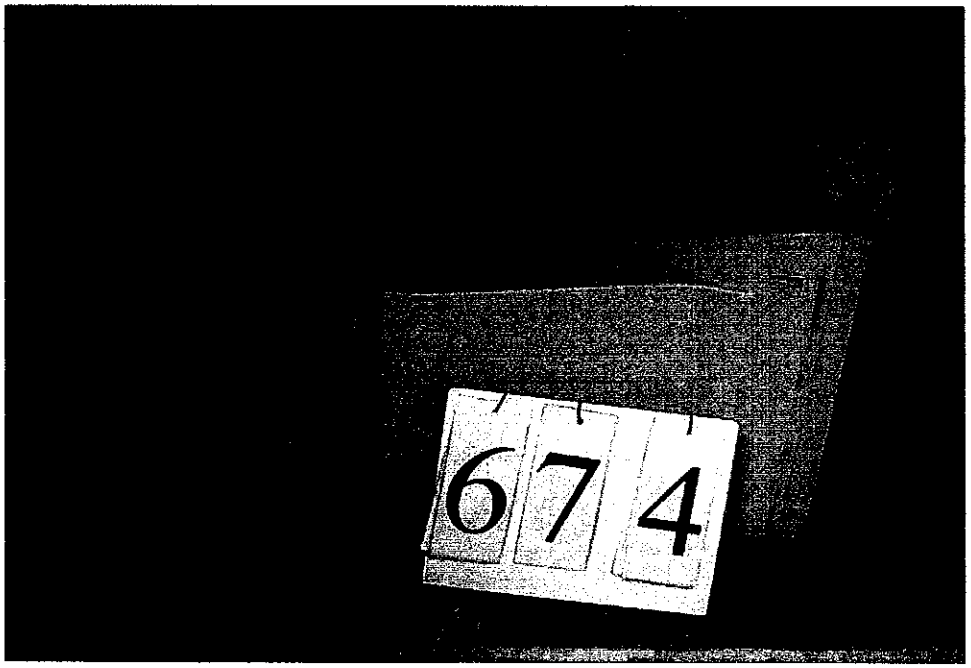
Name	Model Number	Serial Number	Selected
EMCO GTEM	5317	9411-1123	X
EMCO Probe	7122	9406-1194	X
EMCO METERING UNIT	7122	9406-1194	X
EMCO data interface	7110	9410-1273	X
HP Personal Computer	D3178A	3438S00486	X
HP Signal Generator	8657B	2928U00286	X
IFI Wideband Amplifier	SMX50	467-0795	X

Comment:

Performance Criteria (X) A ( ) B ( ) C

IEC 1000-4-3/ ENV 50204 PHOTO OF TEST SET-UP





Chapter 5 Electric Fast Transient/Burst Requirements Test

Test information:

Test setup: According to IEC 1000-4-4

Test Voltage: DC Power line ( ) 0.5 KV, 5 KH

AC Power line (X) 1 KV, 5 KHz

Signal & Control line ( ) 0.5 KV, 5 KHz

( ) 1 KV, 5 KHz

Polarity: (X) Positive (X) Negative

Test Duration: (X) 1 minute ( ) 3 minutes

Connected lines: ( ) Power line shielded (X) Power line nonshielded

( ) Signal & Control line nonshielded ( )Signal & Control line shielded

Test mode: Ref. Test method of Chapter 1.

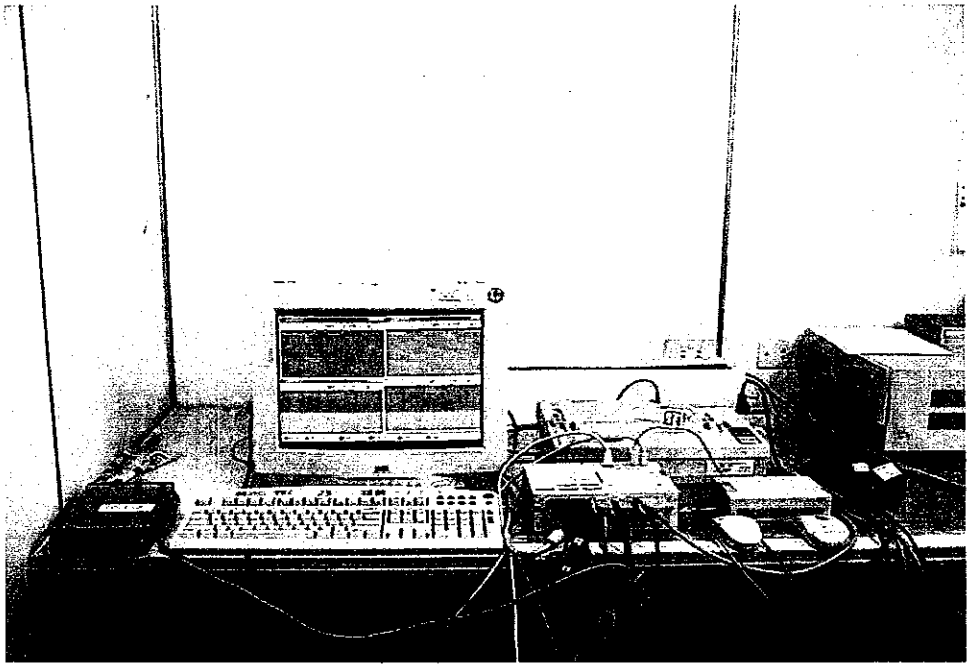
Test instrument:

Name	Model Number	Serial Number	Selected
Best Plus BURST ESD SURGE TRANSIENTS	Best Plus V6.2	199749-019SC	X

Comment:

Performance Criteria ( ) A (X) B ( ) C

IEC 1000-4-4 PHOTO OF TEST SET-UP



Chapter 6 Electrostatic Discharges Immunity Test

Test information:

Test setup: According to IEC 1000-4-2

Test Voltage: (X) 4KV contact discharge

(X) 8KV air discharge

Indirect Discharges: (X) HCP

(X) VCP

Polarity: (X) positive (X) negative

Test mode: Ref. Test method of Chapter 1

Test points: Each port of EUT, Case and Screw.

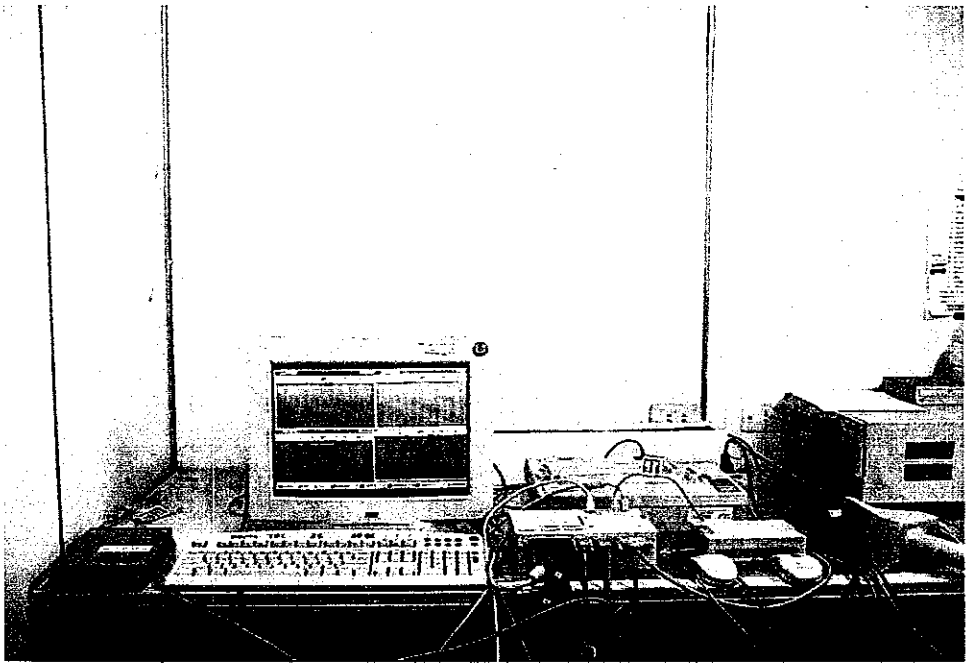
Test instruments:

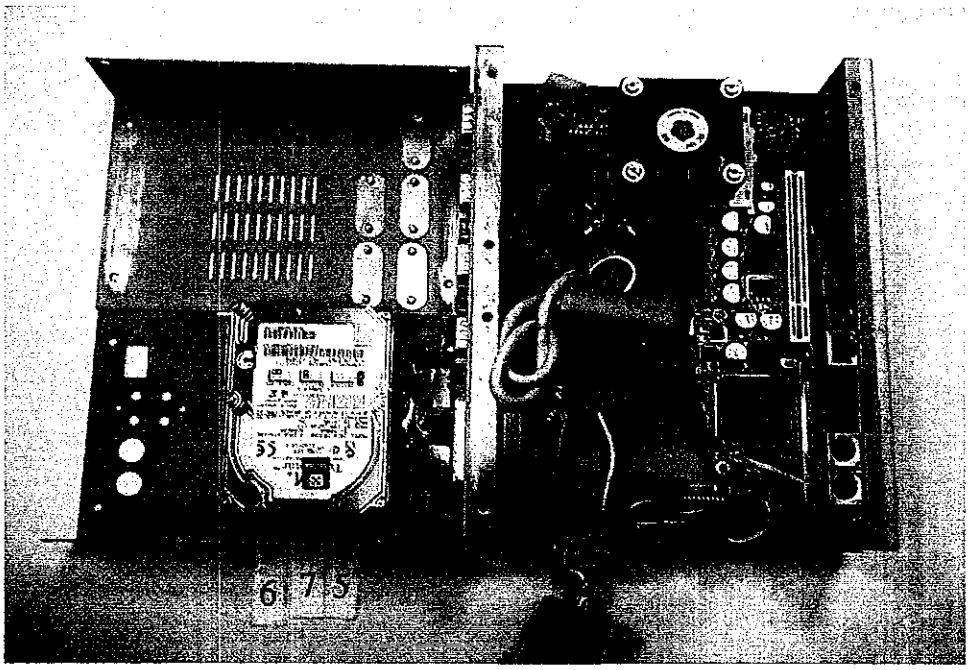
Name	Model Number	Serial Number	Selected
Best Plus BURST ESD SURGE TRANSIENTS	Best Plus V6.2	199749-019SC	X

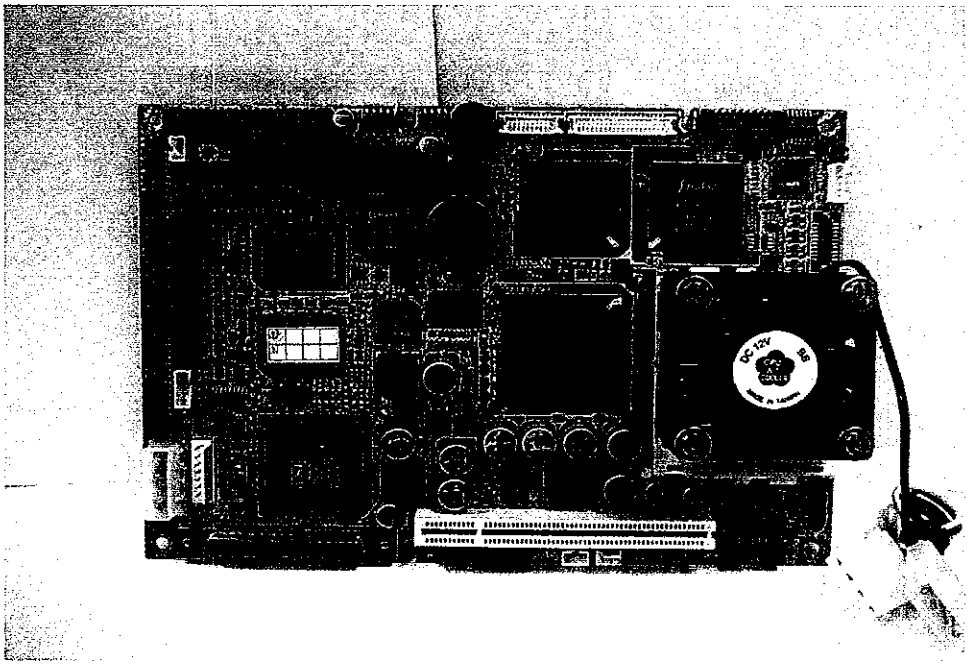
Comment:

Performance Criteria ( ) A (X) B ( ) C

IEC 1000-4-2 PHOTO OF TEST SET-UP







Chapter 7 Surge Immunity Test

Test information:

Test setup: According to IEC 1000-4-5

Test Voltage: DC Power line ( ) 0.5 KV
AC Power line (X) 1 KV
Control line ( ) 0.5 KV
Signal ( ) 1 KV

Time : (X) 1.2/50μs (8/20μs)

Polarity: (X) Positive (X) Negative

Connected lines: ( ) Power line shielded (X) Power line nonshielded
( ) Signal & Control line nonshielded ( )Signal & Control line shielded

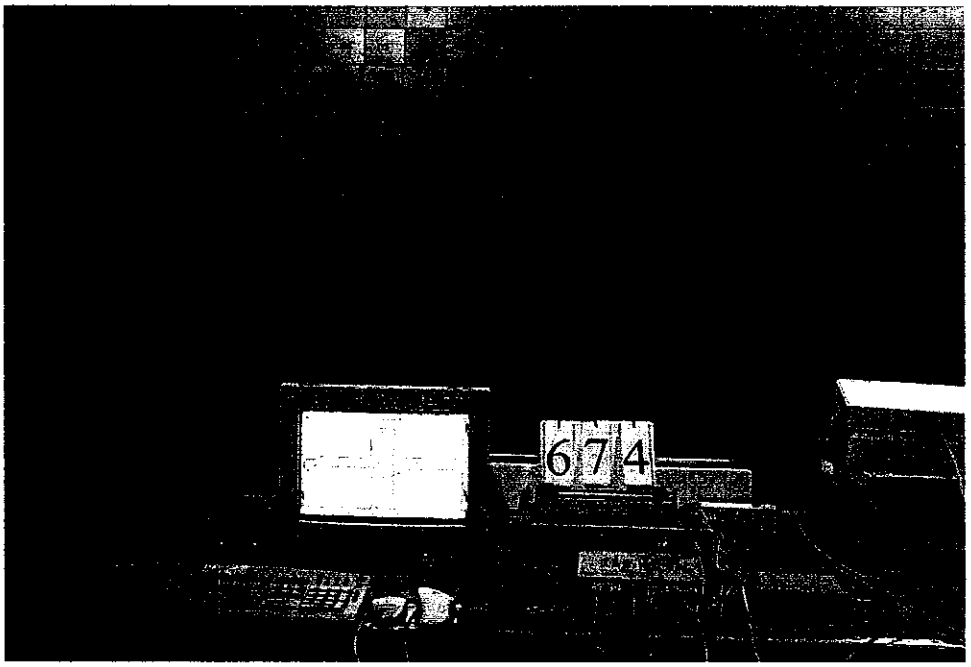
Test mode: Ref. Test method of Chapter 1.

Test instrument:

Name	Model Number	Serial Number	Selected
BEST EMC Test Instrument	BEST EMC V2.3 (-8, -9)	199918-006SC	X
Induction Coil	INA 701 BEST	199922-001SC	X

Comment:
Performance Criteria ( ) A (X) B ( ) C

IEC 1000-4-5 PHOTO OF TEST SET-UP



Chapter 8 Continuous Wave Voltage Immunity Test

Test information:

Test setup: According to EN 61000-4-6

Test Frequency: (X) 0.15 ~ 80MHz

Modulation: ( ) FM %
(X) 80% AM Modulation with 1KHz
( ) 900 MHz±5 MHz with PM 200 Hz and 50% duty cycle

Step size: (X) ≦1% step size

Field strength: ( ) 1V/m (X) 3V/m ( ) 10V/m

Test mode: Ref. Test method of Chapter 1

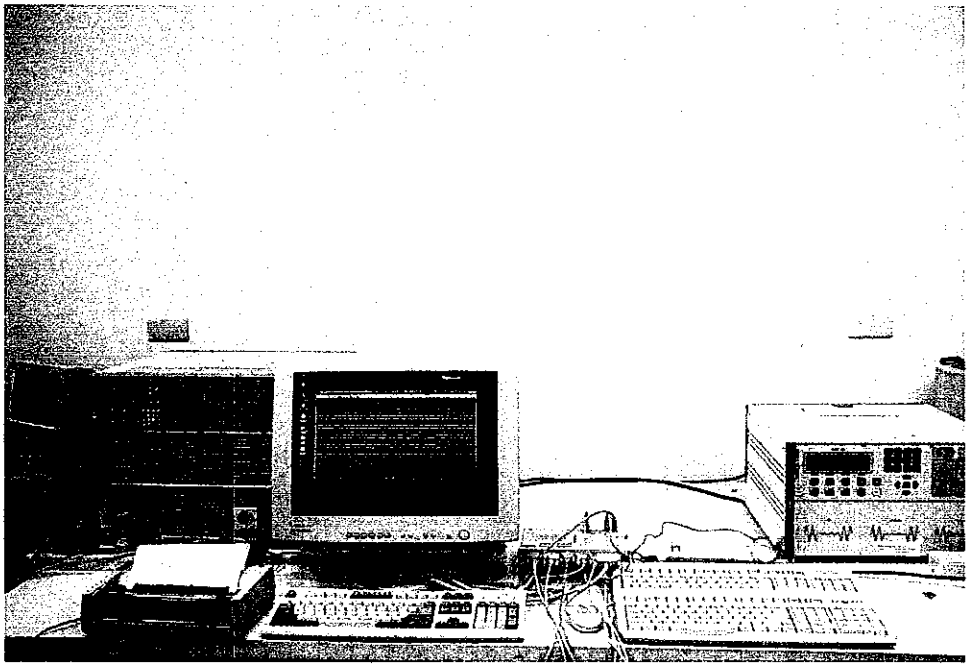
Test instruments:

Name	Model Number	Serial Number	Selected
Signal Generator	HP 8648A	3531	X
Amplifier	ComTest	Switch sub-system	X
CDN	3pin	N/A	X

Comment:

Performance Criteria (X) A ( ) B ( ) C

IEC 1000-4-6 PHOTO OF TEST SET-UP



Chapter 9 Power Frequency Magnetic Field Immunity Test

Test information:

Test setup: According to IEC 1000-4-8

Test method : (X) Continuous ( ) Short duration

Magnetic Field Strength:(X) 3A/m

Frequency: 50Hz

polarization: (X) X polarization (X) Y polarization (X) Z polarization

Test mode: Ref. Test method of Chapter 1

Test Duration: (X) 30 seconds ( ) 1~3 seconds

Connected lines: ( ) Power line shielded (X) Power line non-shielded

( ) Signal & Control line non-shielded ( )Signal & Control line shielded

** Power Frequency Magnetic Field in the horizontal and vertical polarity.**

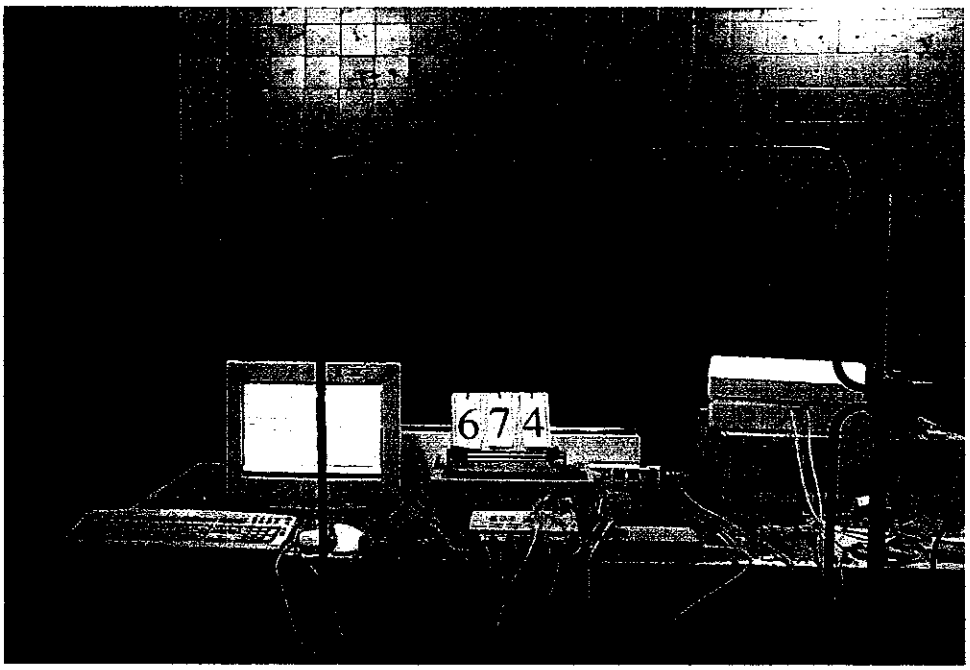
Test instruments:

Name	Model Number	Serial Number	Selected
BEST EMC Test Instrument	BEST EMC V2.3 (-8, -9)	199918-006SC	X
Induction Coil	INA 701 BEST	199922-001SC	X

Comment:

Performance Criteria (X) A ( ) B ( ) C

IEC 1000-4-8 PHOTO OF TEST SET-UP



Chapter 10 Voltage DIP / Interruption Test

Test information:

Test setup: According to IEC 1000-4-11

Voltage Reduction / Duration: (X) 100 %, 0.5
(X) 60%, 10
(X) 30%, 50

Test mode: Ref. Test method of Chapter 1

Test instruments:

Name	Model Number	Serial Number	Selected
BEST EMC Test Instrument	BEST EMC V2.3 (-8, -9)	199918-006SC	X
Induction Coil	INA 701 BEST	199922-001SC	X

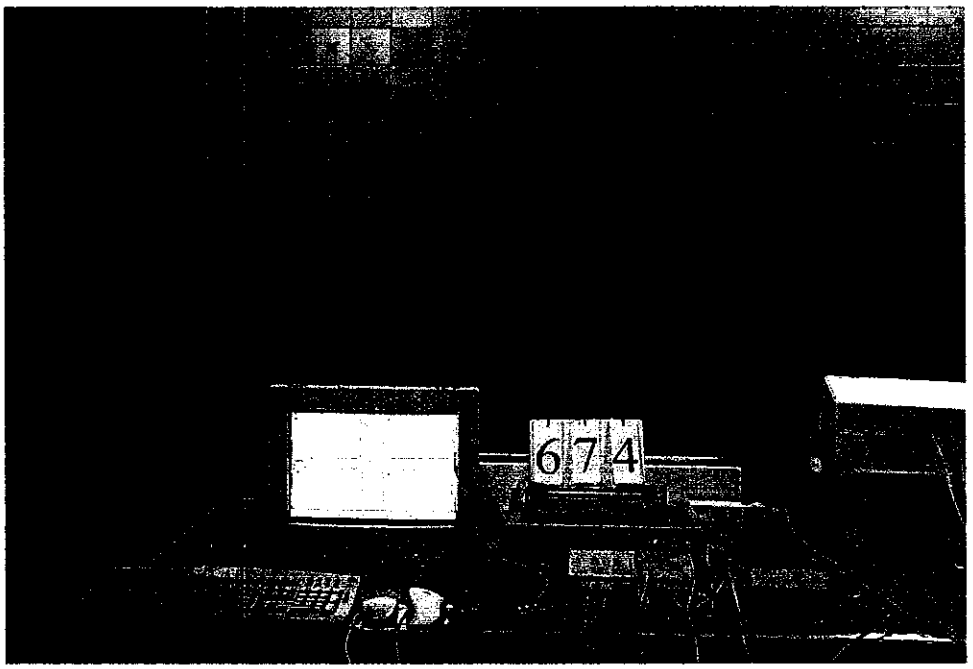
Comment:

Performance Criteria: (1) 100% → ( ) A ( ) B (X) C

(2) 60% → ( ) A (X) B ( ) C

(3) 30% → ( ) A (X) B ( ) C

IEC 1000-4-11 PHOTO OF TEST SET-UP



Chapter 11 Harmonics Test

Test information:

Test setup: According to EN 61000-2-2

Test Item: Quasi – stationary & Fluctuating Current Harmonics Test.

Test mode: Ref. Test method of Chapter 1

Test instrument:

Name	Model Number	Serial Number	Selected
Harmonic/Flicker Test System	HP 6842A	3531A-00102	×

Test Equipment Settings:	Quasi-stationary Current Harmonics Test	Fluctuating Current Harmonics Test
Line Voltage	230VAC	230VAC
Line Frequency	50Hz	50Hz
Device Class	D	D
Test Limit Overrides	None	None
Total Number of Failures:	None	None
Total Number of Errors:	None	None

Test Result: PASS

Chapter 12 Voltage Fluctuation and Flicker Test

Test information:

Test setup: According to EN 61000-2-3

Test mode: Ref. Test method of Chapter 1

Test instrument:

Name	Model Number	Serial Number	Selected
Harmonic/Flicker Test System	HP 6842A	3531A-00102	×

Test Equipment Settings:	
Line Voltage	230VAC
Line Frequency	50Hz
Test Limit Overrides	None
Total Number of Failures:	Pst: (0), Plt: (0)
	Dc: (0), Dmax (0), Dt (0)
Total Number of Errors:	None

Test Result: PASS

Appendix A

Conducted Emission Test Result - 640 X480:

Testing room : Temperature : 23 ° C Humidity : 63 % RH

Line 1

FREQUENCY (KHz)	READING AMPLITUDE			LIMIT		MARGIN (dB)
	Peak (dBμV/m)	Quasi-peak (dBμV/m)	Average (dBμV/m)	Quasi-Peak (dBμV/m)	Average (dBμV/m)	
177.00	47.73	***.**	***.**	79.00	66.00	-18.27
213.00	43.96	***.**	***.**	79.00	66.00	-22.04
390.00	44.26	***.**	***.**	79.00	66.00	-21.74
427.00	54.57	***.**	***.**	79.00	66.00	-11.43
461.00	55.81	***.**	***.**	79.00	66.00	-10.19
496.00	47.44	***.**	***.**	79.00	66.00	-18.56
534.00	44.45	***.**	***.**	73.00	60.00	-15.55
568.00	42.00	***.**	***.**	73.00	60.00	-18.00
637.00	37.61	***.**	***.**	73.00	60.00	-22.39
675.00	36.24	***.**	***.**	73.00	60.00	-23.76

Line 2

FREQUENCY (KHz)	READING AMPLITUDE			LIMIT		MARGIN (dB)
	Peak (dBμV/m)	Quasi-peak (dBμV/m)	Average (dBμV/m)	Quasi-Peak (dBμV/m)	Average (dBμV/m)	
177.000	50.08	***.**	***.**	79.00	66.00	-15.92
212.00	45.49	***.**	***.**	79.00	66.00	-20.51
387.00	45.92	***.**	***.**	79.00	66.00	-20.08
425.00	55.57	***.**	***.**	79.00	66.00	-10.43
461.00	56.92	***.**	***.**	79.00	66.00	-9.08
496.00	45.20	***.**	***.**	79.00	66.00	-20.80
534.00	48.67	***.**	***.**	73.00	60.00	-11.33
564.00	44.95	***.**	***.**	73.00	60.00	-15.05
601.00	38.11	***.**	***.**	73.00	60.00	-21.89
675.00	40.05	***.**	***.**	73.00	60.00	-19.95

* The reading amplitudes are all under average limit.

Conducted Emission Test Result - 800 ×600:

Testing room : Temperature : 23 ° C Humidity : 63 % RH

Line 1

FREQUENCY (KHz)	READING AMPLITUDE			LIMIT		MARGIN (dB)
	Peak (dBμV/m)	Quasi-peak (dBμV/m)	Average (dBμV/m)	Quasi-Peak (dBμV/m)	Average (dBμV/m)	
150.00	44.15	***.**	***.**	79.00	66.00	-21.85
177.00	48.35	***.**	***.**	79.00	66.00	-17.65
213.00	43.31	***.**	***.**	79.00	66.00	-22.69
318.00	42.98	***.**	***.**	79.00	66.00	-23.02
390.00	45.24	***.**	***.**	79.00	66.00	-20.76
427.00	55.17	***.**	***.**	79.00	66.00	-10.83
464.00	52.44	***.**	***.**	79.00	66.00	-13.56
499.00	44.83	***.**	***.**	79.00	66.00	-21.17
534.00	43.62	***.**	***.**	73.00	60.00	-16.38
571.00	41.17	***.**	***.**	73.00	60.00	-18.83

Line 2

FREQUENCY (KHz)	READING AMPLITUDE			LIMIT		MARGIN (dB)
	Peak (dBμV/m)	Quasi-peak (dBμV/m)	Average (dBμV/m)	Quasi-Peak (dBμV/m)	Average (dBμV/m)	
173.00	46.82	***.**	***.**	79.00	66.00	-19.18
178.00	50.28	***.**	***.**	79.00	66.00	-15.72
212.00	45.91	***.**	***.**	79.00	66.00	-20.09
427.00	55.47	***.**	***.**	79.00	66.00	-10.53
461.00	55.58	***.**	***.**	79.00	66.00	-10.42
496.00	48.84	***.**	***.**	79.00	66.00	-17.16
534.00	47.48	***.**	***.**	73.00	60.00	-12.52
564.00	46.14	***.**	***.**	73.00	60.00	-13.86
537.00	40.01	***.**	***.**	73.00	60.00	-19.99
675.00	39.37	***.**	***.**	73.00	60.00	-20.63

* The reading amplitudes are all under average limit.

Conducted Emission Test Result - 1280 X1024:

Testing room : Temperature : 23 ° C Humidity : 63 % RH

Line 1

FREQUENCY (KHz)	READING AMPLITUDE			LIMIT		MARGIN (dB)
	Peak (dBμV/m)	Quasi-peak (dBμV/m)	Average (dBμV/m)	Quasi-Peak (dBμV/m)	Average (dBμV/m)	
178.00	47.60	***.**	***.**	79.00	66.00	-18.40
212.00	44.00	***.**	***.**	79.00	66.00	-22.00
248.00	41.73	***.**	***.**	79.00	66.00	-24.27
390.00	46.20	***.**	***.**	79.00	66.00	-19.80
427.00	54.73	***.**	***.**	79.00	66.00	-11.27
464.00	52.62	***.**	***.**	79.00	66.00	-13.38
496.00	45.39	***.**	***.**	79.00	66.00	-20.61
534.00	44.26	***.**	***.**	73.00	60.00	-15.74
564.00	40.65	***.**	***.**	73.00	60.00	-19.35
637.00	37.63	***.**	***.**	73.00	60.00	-22.37

Line 2

FREQUENCY (KHz)	READING AMPLITUDE			LIMIT		MARGIN (dB)
	Peak (dBμV/m)	Quasi-peak (dBμV/m)	Average (dBμV/m)	Quasi-Peak (dBμV/m)	Average (dBμV/m)	
175.00	49.83	***.**	***.**	79.00	66.00	-16.17
213.00	44.41	***.**	***.**	79.00	66.00	-21.59
387.00	46.18	***.**	***.**	79.00	66.00	-19.82
427.00	54.92	***.**	***.**	79.00	66.00	-11.08
461.00	56.29	***.**	***.**	79.00	66.00	-9.71
496.00	45.79	***.**	***.**	79.00	66.00	-20.21
534.00	48.83	***.**	***.**	73.00	60.00	-11.17
564.00	46.12	***.**	***.**	73.00	60.00	-13.88
537.00	38.19	***.**	***.**	73.00	60.00	-21.81
675.00	38.75	***.**	***.**	73.00	60.00	-21.25

* The reading amplitudes are all under average limit.

Appendix B

Radiated Emission Test Result: (Horizontal) – 480 ×648

Test Conditions:

Testing room : Temperature : 30 ° C Humidity : 69 % RH

Testing site : Temperature : 32 ° C Humidity : 81 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class A limit	Margin
MHz	dBμV	m	degree	dB/m	dBμV /m	dBμV/m	dB
53.350	37.80	4.00	105	-15.00	22.80	40.00	-17.20
167.020	39.20	4.00	0	-13.75	25.45	40.00	-14.55
175.250	38.00	4.00	45	-13.34	24.66	40.00	-15.34
187.250	39.50	2.56	168	-12.66	26.84	40.00	-13.16
300.630	36.40	2.56	32	-7.97	28.43	47.00	-18.57
325.690	35.50	2.56	305	-6.86	28.64	47.00	-18.36
334.040	44.50	2.56	17	-6.44	38.06	47.00	-8.94
***							

Note:

1. Margin = Amplitude - limit, *if margin is minus means under limit.*
2. Corrected Amplitude = Reading Amplitude + Correction Factors
3. Correction factor = Antenna factor + (Cable Loss - Amplitude gain)

(For example: 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

Radiated Emission Test Result: (Vertical)

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class A limit	Margin
MHz	dBμV	m	degree	dB/m	dBμV /m	dBμV/m	dB
33.400	46.70	1.00	284	-9.09	37.61	40.00	-2.39
53.740	32.60	1.00	100	-15.09	17.51	40.00	-22.49
66.780	39.00	4.00	178	-17.01	21.99	40.00	-18.01
84.410	35.10	4.00	70	-16.59	18.51	40.00	-21.49
133.610	44.00	1.00	302	-15.94	28.06	40.00	-11.94
159.990	33.50	1.00	18	-14.10	19.40	40.00	-20.60
167.010	38.60	1.00	83	-13.75	24.85	40.00	-15.15
225.480	30.80	1.00	33	-11.07	19.73	40.00	-20.27
300.640	38.50	4.00	260	-7.97	30.53	47.00	-16.47
325.690	33.50	1.00	17	-6.86	26.64	47.00	-20.36
***							

Radiated Emission Test Result: (Horizontal) – 1024 ×768

Test Conditions:

Testing room : Temperature : 30 ° C Humidity : 69 % RH

Testing site : Temperature : 32 ° C Humidity : 81 % RH

Frequency	**Reading Amplitude**	**Ant. Height**	**Table**	**Correction Factors**	**Corrected Amplitude**	**Class A limit**	**Margin**
MHz	dBμV	m	degree	dB/m	dBμV /m	dBμV/m	dB
33.400	29.50	1.00	0	-9.09	20.41	40.00	-19.59
112.740	30.50	1.00	74	-16.08	14.42	40.00	-25.58
167.020	32.80	1.00	309	-13.75	19.05	40.00	-20.95
300.630	31.90	1.00	37	-7.97	23.93	47.00	-23.07
334.030	37.80	1.00	0	-6.44	31.36	47.00	-15.64
501.050	24.70	1.00	135	-0.97	23.73	47.00	-23.27
***							

Note:

4. Margin = Amplitude - limit, *if margin is minus means under limit.*
5. Corrected Amplitude = Reading Amplitude + Correction Factors
6. Correction factor = Antenna factor + (Cable Loss - Amplitude gain)

(For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

Radiated Emission Test Result: (Vertical)

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class A limit	Margin
MHz	dBμV	m	degree	dB/m	dBμV /m	dBμV/m	dB
33.400	47.70	1.00	311	-9.09	38.61	40.00	-1.39
66.800	42.10	2.56	148	-17.01	25.09	40.00	-14.91
84.410	45.40	1.00	230	-16.59	28.81	40.00	-11.19
90.280	46.00	2.56	225	-16.19	29.81	40.00	-10.19
133.610	44.40	1.00	288	-15.94	28.46	40.00	-11.54
159.990	34.10	1.00	31	-14.10	20.00	40.00	-20.00
167.020	39.50	1.00	100	-13.75	25.75	40.00	-14.25
286.320	34.10	2.56	21	-8.42	25.68	47.00	-21.32
300.640	35.10	2.56	256	-7.97	27.13	47.00	-19.87
325.690	33.60	1.00	6	-6.86	26.74	47.00	-20.26
***							

Radiated Emission Test Result: (Horizontal) – 1280 X1024

Test Conditions:

Testing room : Temperature : 30 ° C Humidity : 70 % RH

Testing site : Temperature : 32 ° C Humidity : 81 % RH

Frequency	**Reading Amplitude**	**Ant. Height**	**Table**	**Correction Factors**	**Corrected Amplitude**	**Class A limit**	**Margin**
MHz	dBμV	m	degree	dB/m	dBμV /m	dBμV/m	dB
33.400	29.80	1.00	1	-9.09	20.71	40.00	-19.29
112.740	31.50	1.00	74	-16.08	15.42	40.00	-24.58
144.000	34.50	1.00	314	-15.02	19.48	40.00	-20.52
167.020	31.70	1.00	8	-13.75	17.95	40.00	-22.05
300.630	31.60	1.00	292	-7.97	23.63	47.00	-23.37
325.680	31.20	1.00	51	-6.86	24.34	47.00	-22.66
576.090	20.60	1.00	254	0.87	21.47	47.00	-25.53
334.030	36.20	1.00	8	-6.44	29.76	47.00	-17.24
***							

Note:

7. Margin = Amplitude - limit, *if margin is minus means under limit.*
8. Corrected Amplitude = Reading Amplitude + Correction Factors
9. Correction factor = Antenna factor + (Cable Loss - Amplitude gain)

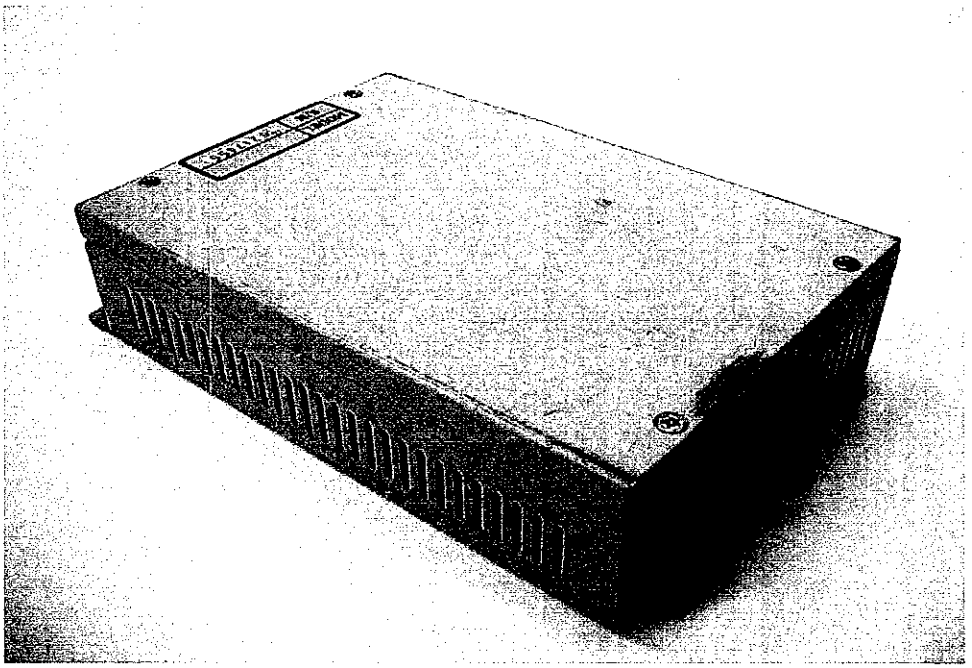
(For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

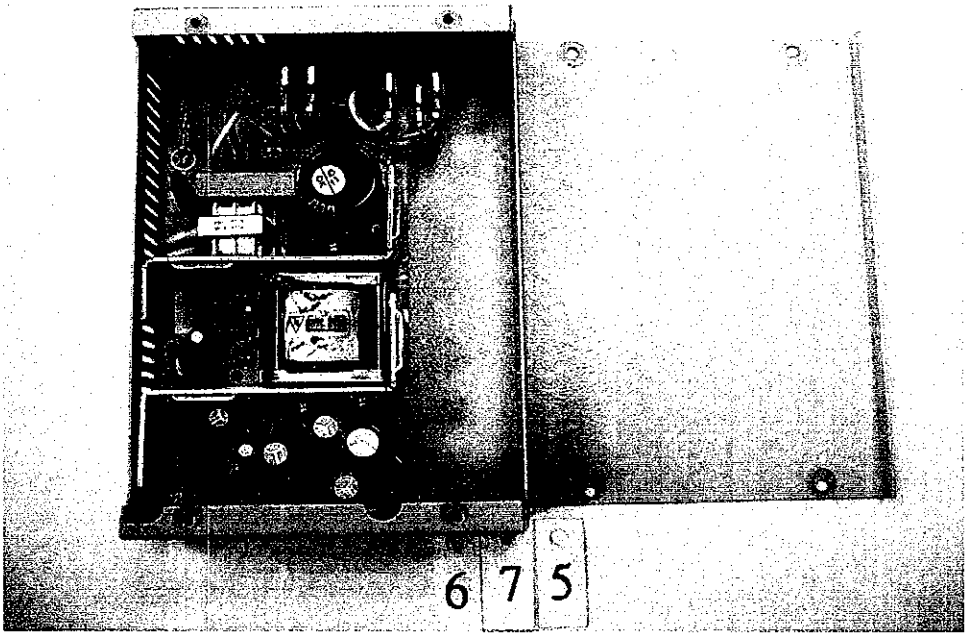
Radiated Emission Test Result: (Vertical)

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class A limit	Margin
MHz	dBμV	m	degree	dB/m	dBμV /m	dBμV/m	dB
33.400	48.00	1.00	301	-9.09	38.91	40.00	-1.09
66.800	42.20	1.00	47	-17.01	25.19	40.00	-14.81
84.410	35.90	1.00	242	-16.59	19.31	40.00	-20.69
125.260	40.70	1.00	65	-16.30	24.40	40.00	-15.60
133.610	44.20	1.00	174	-15.94	28.26	40.00	-11.74
167.020	40.10	1.00	218	-13.75	26.35	40.00	-13.65
212.990	36.00	1.00	124	-11.73	24.27	40.00	-15.73
267.230	34.30	1.00	197	-9.35	24.95	47.00	-22.05
334.030	36.10	4.00	210	-6.44	29.66	47.00	-17.34
***							

Appendix C

Photographs of EUT





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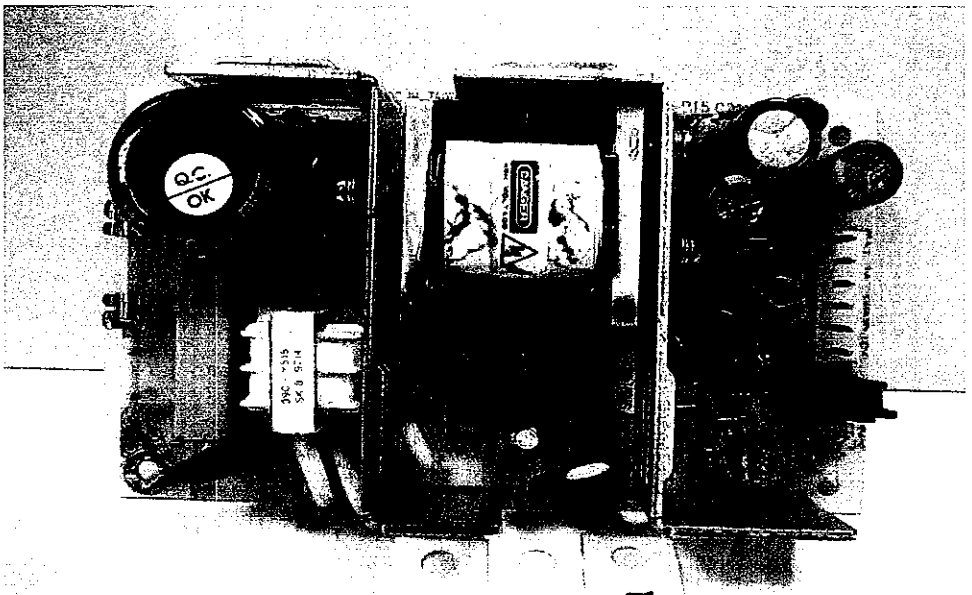
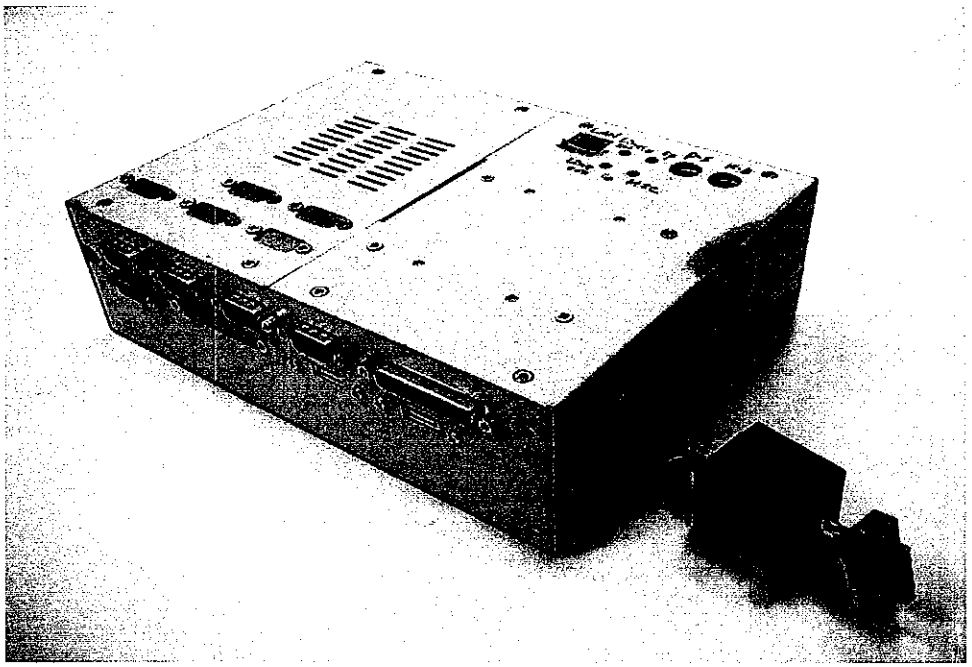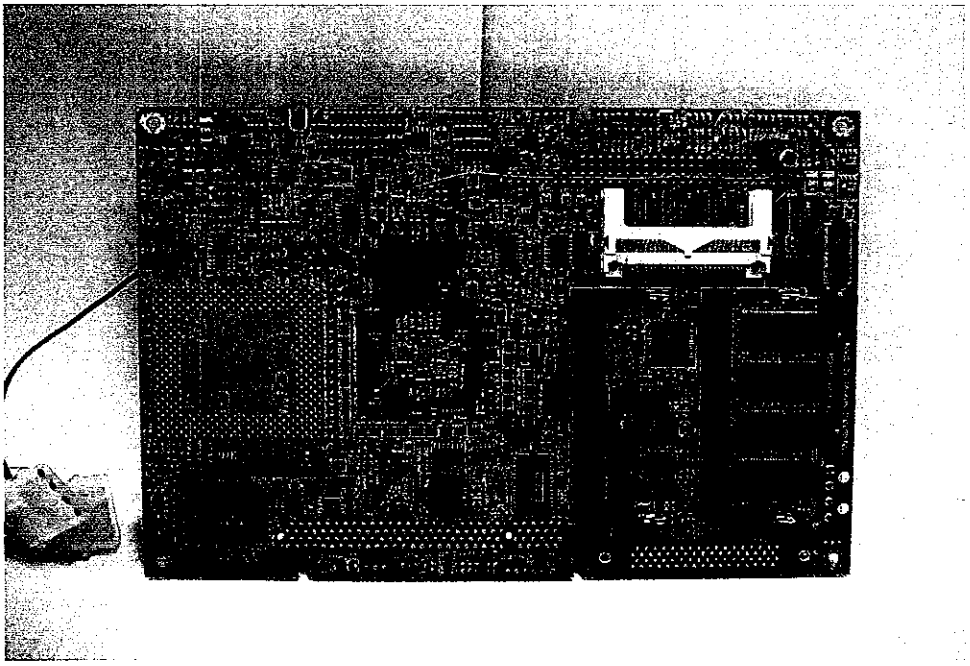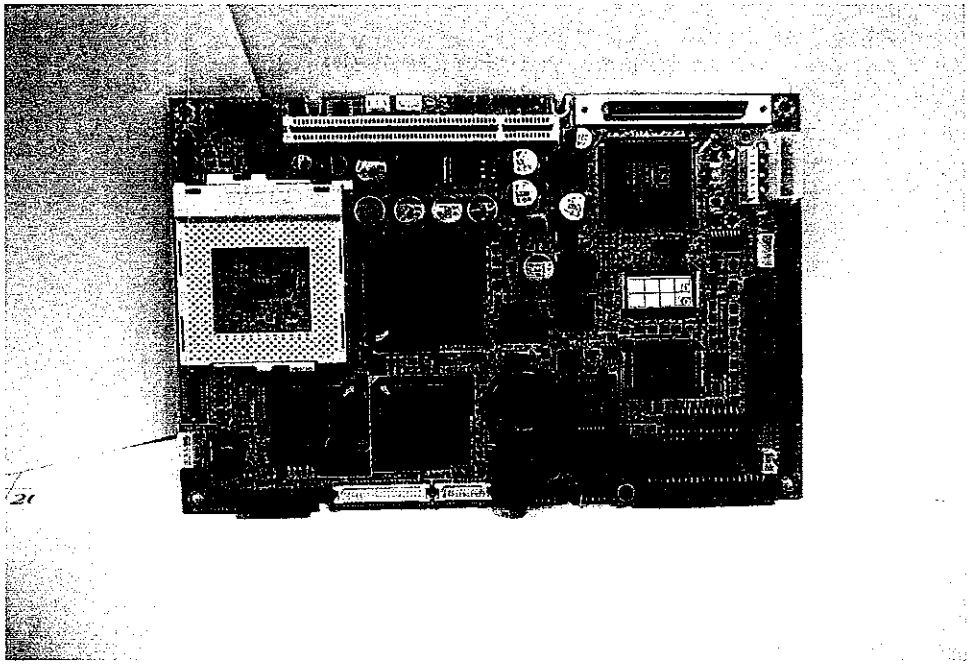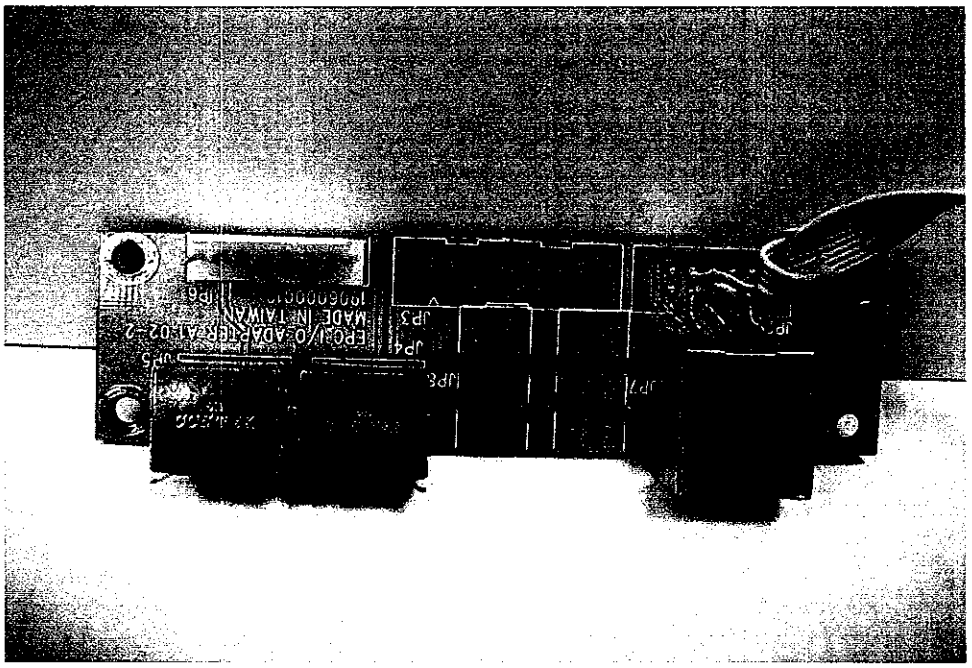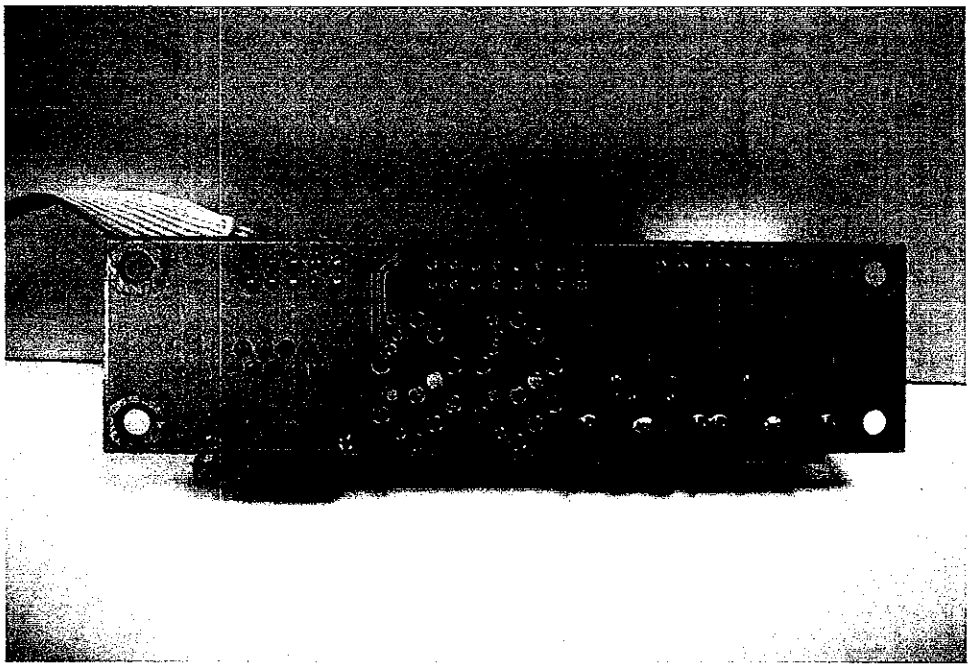
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