FCC CLASS A COMPLIANCE REPORT

for

Electromagnetic Emissions

of

Industrial PC

Trade Name	**:** N/A
Model Number	**:** PCM-6896 (N)
Serial Number	**:** N/A
Report Number	**:** 010449-F
Date	**:** June 7, 2001

Prepared for：

AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Rd., Hsin-Tien City,
Taipei, Taiwan, R.O.C.

Prepared by：

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VERIFICATION OF COMPLIANCE

Equipment Under Test:	Industrial PC
Trade Name:	N/A
Model Number:	PCM-6896 (N)
Serial Number:	N/A
Applicant:	**AAEON Technology Inc.** 5F, No. 135, Lane 235, Pao Chiao Rd., Hsin-Tien City, Taipei, Taiwan, R.O.C.
Manufacturer:	**AAEON Technology Inc.** 5F, No. 135, Lane 235, Pao Chiao Rd., Hsin-Tien City, Taipei, Taiwan, R.O.C.
Type of Test:	FCC Class A
Measurement Procedure:	ANSI C63.4: 1992
File Number:	010449-F
Date of test:	May 26 ~ June 2, 2001
Deviation:	According to applicant's declaration this EUT is a class A product, and to be market in industrial environment only.
Condition of Test Sample:	Normal

The above equipment was tested by C&C Laboratory, Co., Ltd. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, Subpart B and the measurement procedure according to ANSI C63.4. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Responsible Party

Kurt Chen

Authorized Signatory

Officer of the Responsible Party

SYSTEM DESCRIPTION

EUT Test Program:

1. An EMI test software was loaded and executed Windows mode.
2. A communicated software was loaded and executed to communicate between EUT and remote side.
3. EUT (Industrial PC) sends and receives data from Notebook PC on remote side via LAN cable.
4. Data was sent to Monitor filling the screen with upper case of “H” patterns.
5. Test program sequentially exercised all related I/O’s of EUT and sent “H” patterns to all applicable output ports of EUT.
6. Repeat 3 to 5 Test program is self-repeating throughout the test.

PRODUCT INFORMATION

Housing Type:	Metal case		
EUT Power Rating:	100-127/ 200-240VAC, 60/ 50Hz, 5/ 2.5 5A		
AC Power during Test	120VAC/60Hz		
Power Supply Manufacturer:	CEMACS		
Power Supply Model Number:	ENP-1815		
AC Power Cord Type:	Unshielded, 1.8m (Detachable)		
DC Power Cable Type:	N/A		
CPU Manufacture:	Intel	**Type:**	Pentium III-933MHz
OSC/Clock Frequencies:	14.318MHz, 133MHz		
Memory Capacity:		**Install:**	64MB
FDD Manufacturer:	TEAC	**Model:**	FD-05HG
HDD Manufacturer:	Maxtor	**Model:**	33073U4
CD-ROM Manufacturer:	VINTECH	**Model:**	VIN-S24A
Chassis Manufacturer:	AAEON	**Model:**	AEC-6200
VGA Card Manufacturer:	On Board		
IDE Conversion Board Manufacturer:	AAEON	**Model:**	AEC-6100 PCM-3533 ACE-6200

I/O Port of EUT

I/O PORT TYPES	Q'TY	TESTED WITH
1) Parallel Port	1	1
2) Serial Port	4	4
3) Video Port	1	1
4) PS/2 Keyboard Port	1	1
5) PS/2 Mouse Port	1	1
6) Microphone Port	1	1
7) LINE-IN Port	1	1
8) LINE-OUT Port	1	1
9) LAN Port	1	1
10) USB Port	4	4

SUPPORT EQUIPMENT

No.	Equipment	Model #	Serial #	FCC ID	Trade Name	Data Cable	Power Cord
1.	Monitor	D2827A	KR92316215	C5F7NFCMC1518X	HP	Shielded, 1.2m	Unshielded, 1.8m
2.	Printer	2225C	2707S40415	DSI6XU2225	HP	Shielded, 1.4m	AC I/P: Unshielded, 1m DC O/P: Unshielded, 1m
3.	Modem	2400	94-364-176281	DK467GSM24	Computer Peripherals	Unshielded, 1.5m	Unshielded, 1.5m
4.	Modem	2400	94-364-176284	DK467GSM24	Computer Peripherals	Unshielded, 1.5m	Unshielded, 1.5m
5.	PS/2 Mouse	M-S43	LZA93406235	DZL211106	Logitech	Shielded, 1.8m	N/A
6.	PS/2 Keyboard	7932M	G91400266	E5XKB7932MUF0310	BTC	Shielded, 1.8m	N/A
7.	USB Keyboard	5201	N/A	N/A	LEMEL	Shielded, 1.8m	N/A
8.	USB Keyboard	FDA-4251	FDKB84100149	DoC	WINIC	Shielded, 1.4m	N/A
9.	Mouse	M-MM43	LZE93353024	DoC	Logitech	Shielded, 1.9m	N/A
10.	Mouse	M-MM43	LZE93353074	DoC	Logitech	Shielded, 1.9m	N/A
11.	USB Mouse	M-BB48	LZE1450904	FCC DoC	Logitech	Shielded, 1.8m	N/A
12.	USB Mouse	M-BB48	LZE93050164	FCC DoC	Logitech	Shielded, 1.8m	N/A
13.	Walkman	YX-328	W7	N/A	YING-KO	Unshielded, 1.8m	N/A
14.	Multimedia Headset	SX-M	A5-5	N/A	TOKYO	Unshielded, 1.8m	N/A
15.	Notebook PC (Remote)	VALIANT6380IPTD	N/A	N/A	KDS	LAN Cable: Unshielded, 15m	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m

Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

MEASUREMENT PROCEDURE
(PRELIMINARY LINE CONDUCTED EMISSION TEST)

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.

2) Support equipment, if needed, was placed as per ANSI C63.4.

3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

4) The EUT received AC power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.

5) All support equipment received power from a second LISN supplying power of 110VAC/60Hz, if any.

6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.

7) Analyzer / Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.

8) During the above scans, the emissions were maximized by cable manipulation.

9) The following test mode(s) were scanned during the preliminary test:

   Mode(s): (Customer defined)

   1. 1024 x 768 x 256 Colors Resolution

10) After the preliminary scan, we found the following test mode) producing the highest emission level.

    Mode: 1.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

MEASUREMENT PROCEDURE
(FINAL LINE CONDUCTED EMISSION TEST)

1) EUT and support equipment was set up on the test bench as per step 10 of the preliminary test.

2) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

3) The test data of the worst case condition(s) was reported on the Summary Data page.

Data Sample:

Freq. MHz	Q.P. Raw dBuV	Average Raw dBuV	Q.P. Limit dBuV	Average Limit dBuV	Q.P. Margin dB	Average Margin dB	Note
x.xx	39.2	---	79	66	-39.8	-26.8	L 1

Freq. = Emission frequency in MHz
Raw dBuV = Uncorrected Analyzer / Receiver reading
Limit dBuV = Limit stated in standard
Margin dB = Reading in reference to limit
Note = Current carrying line of reading
"---" = The emission level complied with the Average limits, with at least 2 dB margin, so no further recheck.

LINE CONDUCTED EMISSION LIMIT

Frequency	Maximum RF Line Voltage	
	Q.P.	AVERAGE
150kHz-500kHz	79dBuV	66dBuV
500kHz-5MHz	73dBuV	60dBuV
5MHz-30MHz	73dBuV	60dBuV

Note: The lower limit shall apply at the transition frequency.

MEASUREMENT PROCEDURE
(PRELIMINARY RADIATED EMISSION TEST)

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4: 1992 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.

2) Support equipment, if needed, was placed as per ANSI C63.4: 1992.

3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4: 1992.

4) The EUT received AC power source from the outlet socket under the turntable. All support equipment received 110VAC/60Hz power from another socket under the turntable, if any.

5) The antenna was placed at 10 meter away from the EUT as stated in ANSI C63.4: 1992. The antenna connected to the analyzer via a cable and at times a pre-amplifier would be used.

6) The Analyzer / Receiver quickly scanned from 30MHz to 5000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.

7) The following test mode(s) were scanned during the preliminary test:

Mode(s): (Customer defined)

1. 1024 x 768 x 256 Colors Resolution

8) After the preliminary scan, we found the following test mode

Mode: 1.

Then, the EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for reference of final testing.

MEASUREMENT PROCEDURE
(FINAL RAIDATED EMISSION TEST)

1) EUT and support equipment were set up on the turntable as per step 8 of the preliminary test.

2) The Analyzer / Receiver scanned from 30MHz to 5000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.

3) Recorded at least the six highest emissions. Emission frequency, amplitude, were recorded into a computer (The antenna position, polarization and turntable position were kept in raw data file) in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

4) The test data of the worst case condition(s) was reported on the Summary Data page.

Data Sample:

Freq. (MHz)	Raw Data (dBuV/m)	Corr. Factor (dB)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
xx.xx	14.0	11.2	26.2	40	-13.8

Freq.	= Emission frequency in MHz
Raw Data (dBuV/m)	= Uncorrected Analyzer / Receiver reading
Corr. Factor (dB)	= Correction factors of antenna factor and cable loss
Emiss. Level	= Raw reading converted to dBuV/m and CF added
Limit dBuV/m	= Limit stated in standard
Margin dB	= Reading in reference to limit

RADIATED EMISSION LIMIT

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m)		
		Q.P.	AVERAGE	PEAK
30-230	10	40	/	/
230-1000	10	47	/	/
Above 1000	3	/	59.5	79.5

**Note: "/" means the limit line isn't applicable.

SUMMARY DATA

(LINE CONDUCTED TEST)

Model Number: PCM-6896 (N) **Location:** Site # 3

Tested by: Boss Yu

Test Mode: Mode 1

Test Results: Passed

Temperature: 24°C **Humidity:** 68%RH

(The chart below shows the highest readings taken from the final data)

FREQ MHz	Q.P. RAW dBuV	AVG RAW dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.150	45.8	---	79.0	66.0	-33.2	---	L1
13.010	28.5	---	73.0	60.0	-44.5	---	L1
16.940	44.3	---	73.0	60.0	-28.7	---	L1
19.490	26.6	---	73.0	60.0	-46.4	---	L1
25.390	39.2	---	73.0	60.0	-33.8	---	L1
25.400	39.3	---	73.0	60.0	-33.7	---	L1
0.150	46.4	---	79.0	66.0	-32.6	---	L2
6.480	29.1	---	73.0	60.0	-43.9	---	L2
13.010	28.4	---	73.0	60.0	-44.6	---	L2
16.930	43.2	---	73.0	60.0	-29.8	---	L2
25.390	37.4	---	73.0	60.0	-35.6	---	L2
25.400	38.3	---	73.0	60.0	-34.7	---	L2

L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

****NOTE: "---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.**

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: PCM-6896 (N) **Location:** Site # 4

Tested by: Boss Yu

Test Mode: Mode 1 **Polar:** Vertical -- 10m

Detector Function: Quasi-Peak **Test Results:** Passed

Temperature: 24^0C **Humidity:** 58%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dBuV/m)	Corr. Factor (dB)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
75.59	15.5	7.3	22.8	40.0	-17.2
120.21	12.8	13.0	25.8	40.0	-14.2
401.51	10.0	18.8	28.8	47.0	-18.2
501.42	9.4	20.7	30.1	47.0	-16.9
532.46	9.1	21.2	30.3	47.0	-16.7
665.35	9.3	21.9	31.2	47.0	-15.8

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: PCM-6896 (N) **Location:** Site # 4

Tested by: Boss Yu

Test Mode: Mode 1 **Polar:** Horizontal -- 10m

Detector Function: Quasi-Peak **Test Results:** Passed

Temperature: 24^0C **Humidity:** 58%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dBuV/m)	Corr. Factor (dB)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
75.68	15.0	7.3	22.3	40.0	-17.7
120.39	10.1	13.0	23.1	40.0	-16.9
401.28	10.0	18.8	28.8	47.0	-18.2
501.39	10.2	20.7	30.9	47.0	-16.1
532.50	9.7	21.2	30.9	47.0	-16.1
665.65	10.8	21.9	32.7	47.0	-14.3

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: PCM-6896 (N)

Location: 3 meter chamber

Tested by: Boss Yu

Polar: Vertical ---3 m

Test Mode: Mode 1.

Detector Function: Pk / A.V.

Test Results: Passed

Temperature: 23°C

Humidity: 60%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dBuV/m)	Corr. Factor (dB)	Emiss. Level (Pk) (dBuV/m)	Limits (Pk)	Margin (dB)
2966.00	3.8	33.4	37.2	79.5	-42.3
3497.00	2.6	35.1	37.7	79.5	-41.8
3571.00	3.5	35.3	38.8	79.5	-40.7

****Note:** In case of peak reading complied with the limit at least 22dB margin, no further measurement with A.V. detector required.

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: PCM-6896 (N)

Location: 3 meter chamber

Tested by: Boss Yu

Polar: Horizontal ---3 m

Test Mode: Mode 1.

Detector Function: Pk / A.V.

Test Results: Passed

Temperature: 23°C

Humidity: 60%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dBuV/m)	Corr. Factor (dB)	Emiss. Level(Pk) (dBuV/m)	Limits (Pk)	Margin (dB)
3309.00	2.5	34.5	37.0	79.5	-42.5
3589.00	2.9	35.4	38.3	79.5	-41.2
4154.00	2.5	36.9	39.4	79.5	-40.1

****Note:** In case of peak reading complied with the limit at least 22dB margin,
no further measurement with A.V. detector required.

TEST FACILITY

Location: No. 15, 14 Line, Chin Twu Chi, Lu Chu Hsiang, Taoyuan, Taiwan, R.O.C.

Description: There are four 3/10m open area test sites and three line conducted labs for final test.
The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 1992 and CISPR 22/EN 55022 requirements.

Site Filing: A site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.

Registration also was made with Voluntary Control Council for Interference (VCCI).

Site Accreditation: Accredited by NEMKO (Authorization #: ELA 124) for EMC & A2LA (Certificate #: 824.01) for Emission

Also accredited by BSMI for the product category of Information Technology Equipment.

Instrument Tolerance: All measuring equipment is in accord with ANSI C63.4 and CISPR 22 requirements that meet industry regulatory agency and accreditation agency requirement.

Ground Plane: Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

Site # 3 & # 4 Line Conducted Test Site: At Shielding Room

TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at C & C Laboratory, Co., Ltd. for testing. The equipment conforms to the CISPR 16-1 / ANSI C63.2-1988 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10kHz to 1.0GHz or above .

Equipment used during the tests:

Open Area Test Site: # 4

Open Area Test Site # 4					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL. DUE**
Spectrum Analyzer	ADVANTEST	R3132	91700456	02/21/2001	02/20/2002
EMI Test Receiver	R&S	ESVS10	846285/016	04/16/2001	04/15/2002
Precision Dipole	R&S	HZ-12	846932/0004	07/14/2000	07/13/2001
Precision Dipole	R&S	HZ-13	846556/0008	07/14/2000	07/13/2001
Bilog Antenna	CHASE	CBL 6112B	2462	01/16/2001	01/15/2002
Turn Table	Chance most	N/A	N/A	N.C.R	N.C.R
Antenna Tower	Chance most	N/A	N/A	N.C.R	N.C.R
Controller	Chance most	N/A	N/A	N.C.R	N.C.R
RF Switch	ANRITSU	MP59B	M51067	N.C.R	N.C.R
Site NSA	C&C Lab.	N/A	N/A	11/24/2000	11/23/2001

3 meter chamber					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL. DUE**
Spectrum Analyzer	ADVANTEST	R3271A	85060321	10/04/2000	10/03/2001
Pre-Amplifier	HP	8449B	3008A00965	10/03/2000	10/02/2001
Horn Antenna	EMCO	3115	9602-4659	04/17/2001	04/16/2002
Coaxial Cable	ANOREW	LDF-2-50	79027	09/22/2000	09/21/2001
Turn Table	HD	DS 415	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA 240	N/A	N.C.R	N.C.R
Controller	HD	HD 100	N/A	N.C.R	N.C.R

Conducted Emission Test Site: # 4

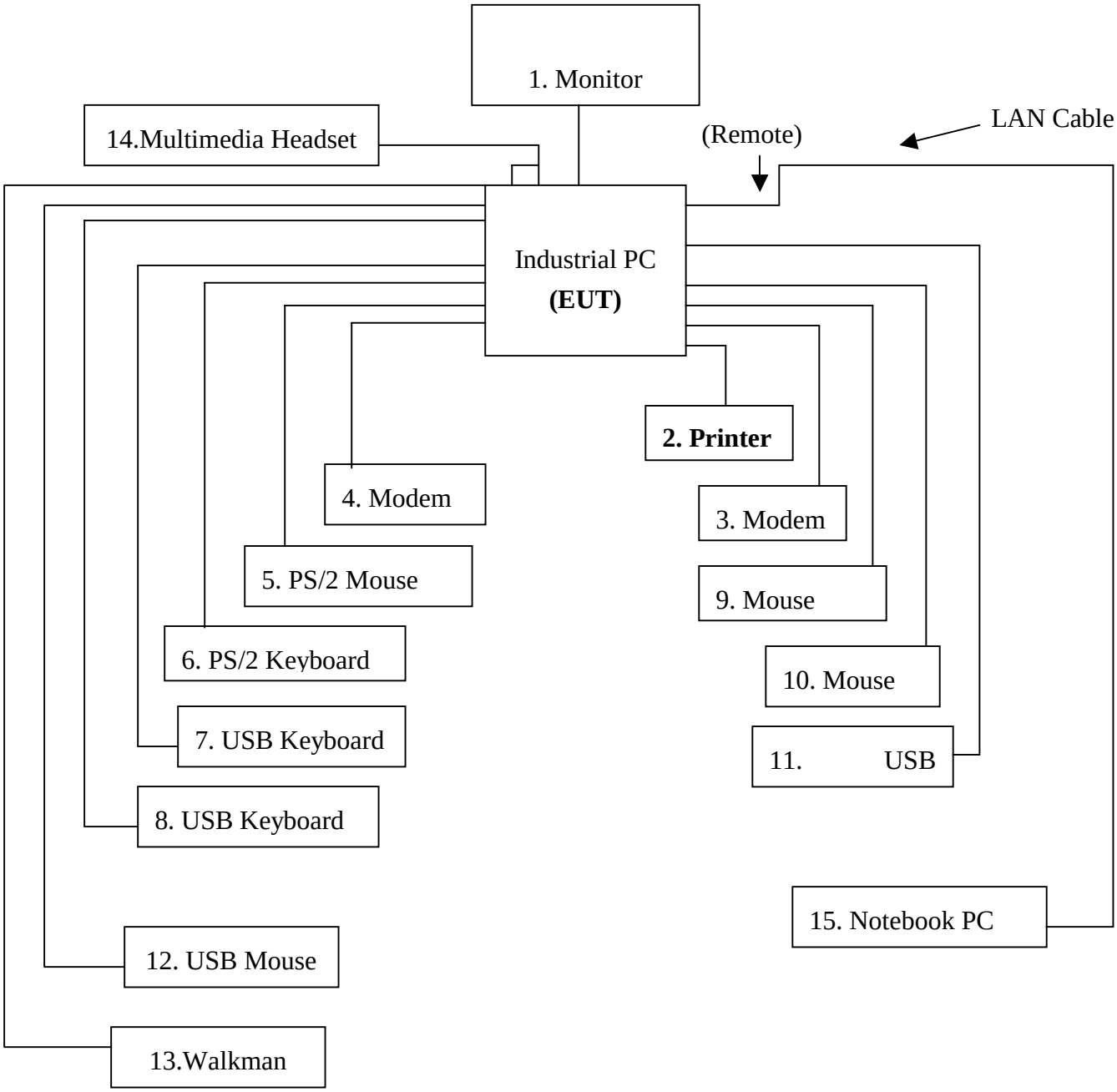
Conducted Emission Test Site # 4					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL. DUE**
EMI Test Receiver	R&S	ESHS10	843743/015	12/15/2000	12/14/2001
LISN	R&S	ENV 4200	8303261016	11/18/2000	11/17/2001
LISN	EMCO	3825/2	9003/1382	02/08/2001	02/07/2002

The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

BLOCK DIAGRAM OF TEST SETUP

System Diagram of Connections between EUT and Simulators

EUT: Industrial PC
Trade Name: N/A
Model Number: PCM-6896 (N)
Power Cord: Unshielded, 1.8m



APPENDIX 1

PHOTOGRAPHS OF TEST SETUP

TEST SETUP OF LINE CONDUCTED EMISSION TEST (EN 55022)

TEST SETUP OF RADIATED EMISSION TEST(EN 55022)

APPENDIX 2

PHOTOGRAPHS OF EUT

Front view of EUT

Back view of EUT

Left view of EUT

Right view of EUT

Bottom view of EUT