



EMC UPDATE TEST REPORT

For

Advantech Co., Ltd.

Panel PC with Touch Screen

Model: POC-174XX-YY-ZZ

(X = 0 ~ 9 or A ~ Z, Y = 0 ~ 9 or A ~ Z, Z = 0 ~ 9, A ~ Z or Blank)

Trade Name: ADVANTECH

Revision: 03

Description of Rev. 03:

1. Applicant adds two DVD-ROMs and one CD-ROM for Type 1 of EUT to re-test.
(Please refer to have ** mark items on this report)
2. Other information, please refer to the B31107201-D, 40917201-D, 50506104-D and this test report.

Approved by:

Reviewed by:

Kurt Chen
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Compliance Certification Services Inc.

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1 TEST RESULT CERTIFICATION

Applicant: **Advantech Co., Ltd.**
No. 1, Alley 20, Lane 26, Rueiguang Road, Neihu District,
Taipei 114, Taiwan, R.O.C.

Manufacturer: **Advantech Co., Ltd.**
No. 1, Alley 20, Lane 26, Rueiguang Road, Neihu District,
Taipei 114, Taiwan, R.O.C.

Equipment Under Test: Panel PC with Touch Screen

Trade Name: ADVANTECH

Model: POC-174XX-YY-ZZ
(X = 0 ~ 9 or A ~ Z, Y = 0 ~ 9 or A ~ Z, Z = 0 ~ 9, A ~ Z or Blank)

Detailed EUT Description: See Item 2 of this report

Date of Test: February 16 ~ 17, 2006

Applicable Standard	Class / Limit	Test Result
FCC Part 15 Subpart B, IC ICES-003	Class B	No non-compliance noted
Deviation from Applicable Standard		
None		

The above equipment was tested by Compliance Certification Services Inc. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, Subpart B and the measurement procedures were 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.



2 EUT DESCRIPTION

Product	Panel PC with Touch Screen		
Trade Name	ADVANTECH		
Model	POC-174XX-YY-ZZ (X = 0 ~ 9 or A ~ Z, Y = 0 ~ 9 or A ~ Z, Z= 0 ~ 9, A ~ Z or Blank)		
Housing Type	Plastic		
Power Supply Manufacturer	FSP	Model	FSP180-50MP
Power Supply Power Rating	100-240VAC, 50-60Hz, 4A		
AC Power Cord Type	Unshielded, 1.8m (Detachable) to Power Adapter		
CPU Manufacturer	Intel	Model	P4 1.7GHz
			P4 2.2GHz
OSC/Clock Frequencies	100MHz		
Memory Capacity		Installed	256MB / 512MB
Main Board Manufacturer	Advantech	Model	PCM-9682
LCD Panel Manufacturer	AU	Model	M170EN07
			M170EG01
HDD Manufacturer	Fujitsu	Model	MHS2020AT (20GB)
			MHT2020AT (20GB)
FDD Manufacturer	NEC	Model	FD3238TGRP
CD-ROM Manufacturer **	QSI	Model	SCR-242 (24X)
	TEAC	Model	CD-224E
DVD-ROM Manufacturer	ASUS	Model	SCD-2400
**	QSI	Model	SBW-243
			SDW-082S
I/O Board Manufacturer	CANOPUS	Model	MPEG2 ENCODER-2

**I/O Port of EUT (Type 1)**

I/O PORT TYPES	Q'TY	TESTED WITH
1). Parallel Port	1	1
2). Serial Port	4	4
3). Video Out Port (VGA)	1	1
4). PS/2 Keyboard/ Mouse Port	1	1
5). Line In Port	1	1
6). Line Out Port	1	1
7). Microphone Port	1	1
8). LAN Port	2	2
9). USB Port	2	2

I/O Port of EUT (Type 2)

I/O PORT TYPES	Q'TY	TESTED WITH
10). Parallel Port	1	1
11). Serial Port	4	4
12). Video Out Port (VGA)	1	1
13). PS/2 Keyboard/ Mouse Port	1	1
14). Line In Port	1	1
15). Line Out Port	1	1
16). Microphone Port	1	1
17). LAN Port	2	2
18). USB Port	2	2
19). Speaker Out Port (On I/O Board)	1	1
20). S-Video In Port (On I/O Board)	1	1
21). S-Video Out Port (On I/O Board)	1	1
22). AV-Audio In Port (On I/O Board)	1	1
23). AV-Audio Out Port (On I/O Board)	1	1

Note: 1. The means of "XX" (X = A~Z, 0 ~ 9 or Blank) on the model number is different Panel as per customer Declaration.

- The "CD" is Panel PC with the CD-ROM Device.
- The "CR" is Panel PC with the CD-RW Device.
- The "DR" is Panel PC with the DVD-ROM Device.
- The "EW" is Panel PC Without Device.

2. The means of "YY" (Y = 0 ~ 9 or A ~ Z) on the model number is different Power Supply as per customer

- The "AC" is for the AC Power Supply.

3. The means of "ZZ" (Z = 0 ~ 9, A ~ Z or Blank) on the model number is for the touch screen function as per customer declaration.

- The "VT" is Panel PC with Touch Screen.
- The "Blank" is Panel PC without Touch Screen.

4. Client consigns only one model sample (Model Number : POC-174CD-AC-VT) to test. Therefore, testing Lab. just guarantees the units, which have been tested.

5. Client consigns only one model sample (Model Number : POC-174T) to test. Therefore, testing Lab. just guarantees the units, which have been tested.

**6. Client consigns only one model sample (Model Number : POC-174XX-YY-ZZ) to test. Therefore, testing Lab. just guarantees the units, which have been tested.



3 TEST METHODOLOGY

3.1 DECISION OF FINAL TEST MODE

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

Mode 1

1280 × 1024 Resolution with QSI/SBW-243 DVD-ROM

Mode 2

1280 × 1024 Resolution with QSI/SDW-082S DVD-ROM

Mode 3

1280 × 1024 Resolution with TEAC/CD-224E CD-ROM

Mode 2

1024 × 768 Resolution with QSI/SBW-243 DVD-ROM

Mode 3

800 × 600 Resolution with QSI/SBW-243 DVD-ROM

2. After the preliminary scan, the following test mode was found to produce the highest emission level.

Mode 1

Then, the EUT configuration and cable configuration of the above highest emission mode was chosen for all final test items.



4 SETUP OF EQUIPMENT UNDER TEST

Setup Diagram

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

Support Equipment

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1.	Monitor	959NF	AQ19H2RT706132L	FCC DoC	SAMSUNG	Shielded, 1.8m with two cores	Unshielded, 1.8m
2.	Modem	DM-1414	304012265	IFAXDM1414	ACEEX	Unshielded, 1.8m	Unshielded, 1.8m
3.	Modem	DM-1414	304012266	IFAXDM1414	ACEEX	Unshielded, 1.8m	Unshielded, 1.8m
4.	Printer	STYLUS C60	DR3K039099	FCC DoC	EPSON	Shielded, 1.8m	Unshielded, 1.8m
5.	PS/2 Keyboard (One to two adapter)	Y-SP29	SYU30272826	FCC DoC	Logitech	Unshielded, 1.8m	N/A
6.	PS/2 Mouse (One to two adapter)	M-S34	HCA25200473	DZL211029	Logitech	Unshielded, 1.8m	N/A
7.	Mouse	M-MM43	LZE95250096	FCC DoC	Logitech	Unshielded, 1.8m	N/A
8.	Mouse	M-MM43	LZE93353074	FCC DoC	Logitech	Unshielded, 1.8m	N/A
9.	USB 2.0 External HDD	F12-UF	A0100214-39t0001	FCC DoC	TeraSyS	Shielded, 1.8m	N/A
10.	USB 2.0 External HDD	F12-UF	A0100214-39t0005	FCC DoC	TeraSyS	Shielded, 1.8m	N/A
11.	Walkman	RQ-L10	DB001392	FCC DoC	Panasonic	Unshielded, 1.8m	N/A
12.	Multimedia Earphone	Axis-301	N/A	FCC DoC	Labtec	Unshielded, 1.8m	N/A
13.	Notebook PC (Remote)	M285	NU2503544	FCC DoC	LEO	LAN Cable: Unshielded, 1.0m x 2	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.5m with a core

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.



5 FACILITIES AND ACCREDITATIONS

5.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

5.2 TEST AND MEASUREMENT EQUIPMENT

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective manual.

Equipment Used for Emission Measurement

Conducted Emission Test Site # 3				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCS30	845552/030	03/16/2006
LISN	R&S	ESH2-Z5	843285/010	01/04/2007
LISN	R&S	ESH3-Z5	848773/014	10/24/2006

Note: The measurement uncertainty is less than +/- 2.83dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.

Open Area Test Site # 1				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	ADVANTEST	R3261C	71720533	N.C.R
EMI Test Receiver	SCHAFFNER	SCR 3501	436	11/24/2006
Pre-Amplifier	HP	8447D	2944A09173	03/22/2006
Bilog Antenna	Sunol Sciences	JB1	A111203	03/25/2006
Turn Table	EMCO	2081-1.21	N/A	N.C.R
Antenna Tower	EMCO	2075-2	9707-2604	N.C.R
Controller	EMCO	2090	N/A	N.C.R
RF Switch	Anritsu	MP59B	M54367	N.C.R
Site NSA	CCS	N/A	N/A	08/26/2006

Note: The measurement uncertainty is less than +/- 3.36dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.



6 TEST RESULTS

Line Conducted Emission

CCS Conduction Test#3

Job No.:60123110

Date:2006/2/16

Time:PM 08:44

Temp.(°C)/Hum.(%):23 °C / 55 %

Tested by: Harry wang

Standard:CISPR 22 / EN 55022 Class B

Power Source:120 Vac / 60Hz

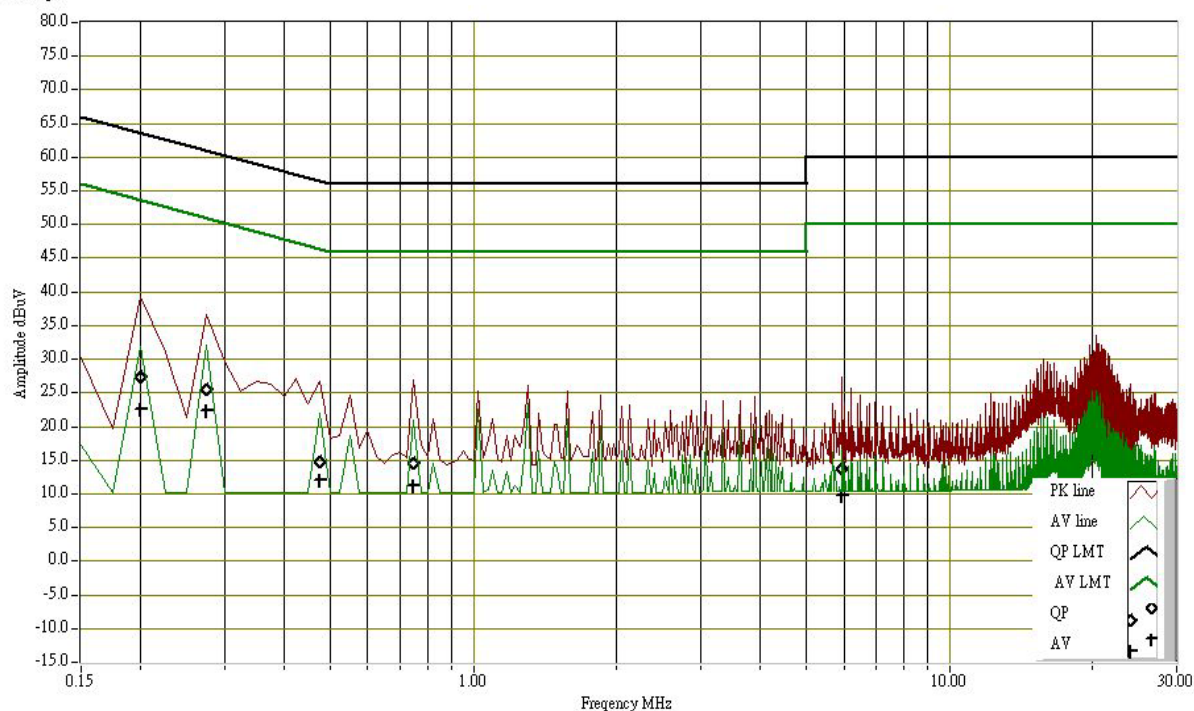
Measured Line:L1

Company:ADVANTECH

Product :

Model :POC-174XX-YY-ZZ

final Graph



Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. Factor (dBuV)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dBuV)	AV Margin (dBuV)	Remark
0.200	27.260	22.660	10.100	37.360	32.760	63.611	53.611	-26.251	-20.851	PASS
0.275	25.460	22.410	10.100	35.560	32.510	60.966	50.966	-25.406	-18.456	PASS
0.475	14.820	12.150	10.100	24.920	22.250	56.426	46.426	-31.506	-24.176	PASS
0.750	14.460	11.280	10.150	24.610	21.430	56.000	46.000	-31.390	-24.570	PASS
5.950	13.780	9.860	10.400	24.180	20.260	60.000	50.000	-35.820	-29.740	PASS
20.275	18.060	15.990	11.027	29.087	27.017	60.000	50.000	-30.913	-22.983	PASS

L1 = Line One (Live Line)



CCS Conduction Test#3

Job No.:60123110

Date:2006/2/16

Time:PM 08:35

Temp.(°C)/Hum.(%):23 °C / 55 %

Tested by: Harry wang

Standard:CISPR 22 / EN 55022 Class B

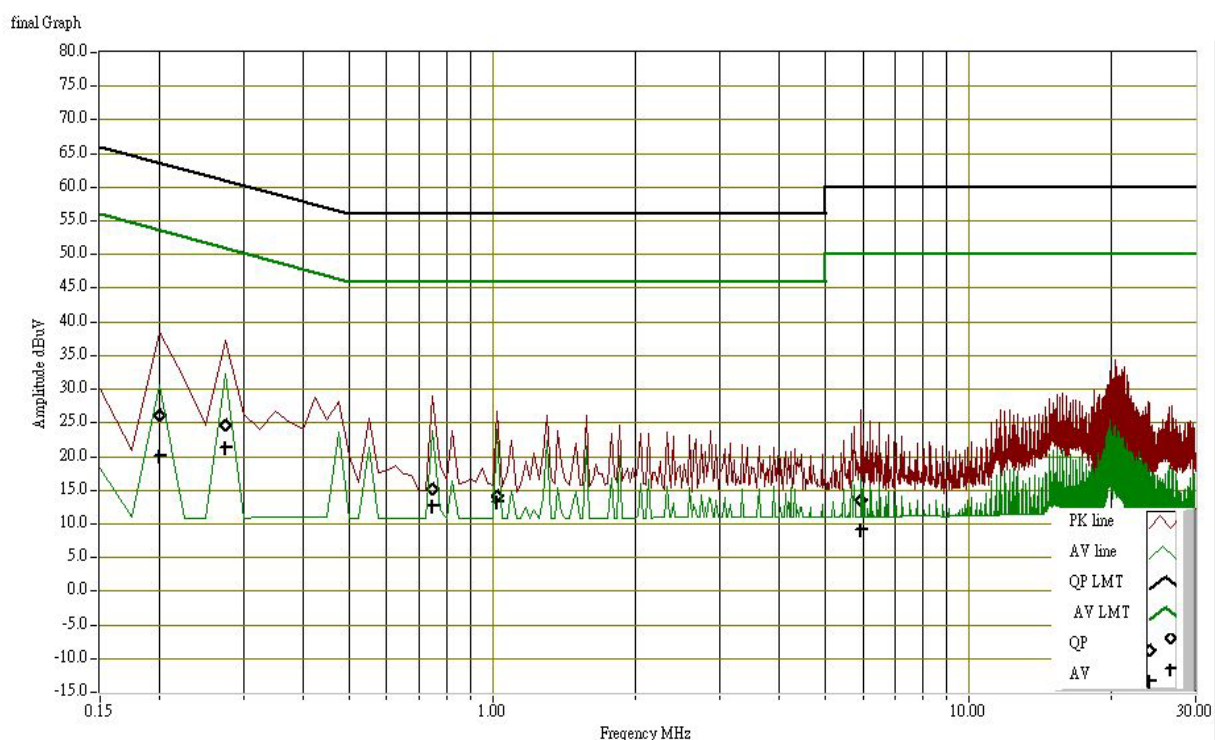
Power Source:120 Vac / 60Hz

Measured Line:L2

Company:ADVANTECH

Product :

Model :POC-174XX-YY-ZZ



Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. Factor (dBuV)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dBuV)	AV Margin (dBuV)	Remark
0.200	26.080	20.140	10.900	36.980	31.040	63.611	53.611	-26.631	-22.571	PASS
0.275	24.620	21.430	10.900	35.520	32.330	60.966	50.966	-25.446	-18.636	PASS
0.750	15.240	12.580	10.900	26.140	23.480	56.000	46.000	-29.860	-22.520	PASS
1.025	14.180	13.220	10.900	25.080	24.120	56.000	46.000	-30.920	-21.880	PASS
5.950	13.580	9.140	11.100	24.680	20.240	60.000	50.000	-35.320	-29.760	PASS
20.275	19.640	16.270	11.711	31.351	27.981	60.000	50.000	-28.649	-22.019	PASS

L2 = Line Two (Neutral Line)

**Radiated Emission (A)****Model:** POC-174XX-YY-ZZ**Test Mode:** Mode 1**Temperature:** 15°C**Humidity:** 58% RH**Detector Function:** Quasi-peak.**Antenna:** Vertical at 10m**Tested by:** Harry Wang**Test Results:** Pass

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

Freq. (MHz)	Raw Data (dBuV)	Corr. Factor (dB/m)	Emiss. Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
62.80	16.79	9.91	26.70	30.00	-3.30
71.50	17.03	10.67	27.70	30.00	-2.30
171.30	13.20	14.46	27.66	30.00	-2.34
202.17	12.70	15.10	27.80	30.00	-2.20
477.50	10.82	22.08	32.90	37.00	-4.10
625.17	8.90	25.00	33.90	37.00	-3.10
733.20	7.70	26.50	34.20	37.00	-2.80

**Radiated Emission (B)****Model:** POC-174XX-YY-ZZ**Test Mode:** Mode 1**Temperature:** 15°C**Humidity:** 58% RH**Detector Function:** Quasi-peak.**Antenna:** Horizontal at 10m**Tested by:** Harry Wang**Test Results:** Pass

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

Freq. (MHz)	Raw Data (dBuV)	Corr. Factor (dB/m)	Emiss. Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
177.30	11.92	14.28	26.20	30.00	-3.80
202.11	12.60	15.11	27.71	30.00	-2.29
400.10	10.90	19.40	30.30	37.00	-6.70
434.29	11.97	20.63	32.60	37.00	-4.40
466.19	11.98	21.72	33.70	37.00	-3.30
644.20	9.10	25.46	34.56	37.00	-2.44
735.20	7.28	26.52	33.80	37.00	-3.20

APPENDIX I - PHOTOGRAPHS OF TEST SETUP

LINE CONDUCTED EMISSION TEST



RADIATED EMISSION TEST

