



EMC UPDATE TEST REPORT

For

Advantech Co., Ltd.

Panel PC with Touch Screen

Model: POC-S175

Trade Name: ADVANTECH

Revision: 01

Description of Rev. 01:

1. Applicant adds one CPU, one Main Board for new appearance and one Battery to re-test.
(Please refer to have ** mark items on this report)
2. Other information, please refer to the 41109204 and this test report.

Approved by:

Kurt Chene
Director of Linkou Laboratory
Compliance Certification Services Inc.

Reviewed by:

Susan Su
Section Manager of Linkou Laboratory
Compliance Certification Services Inc.

***Note:** This report shall not be reproduced except in full, without the written approval of Compliance Certification Services Inc. Ltd. This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document.*



TABLE OF CONTENTS

1	TEST RESULT CERTIFICATION	3
2	EUT DESCRIPTION.....	4
3	TEST METHODOLOGY	6
3.1	DECISION OF FINAL TEST MODE	6
4	SETUP OF EQUIPMENT UNDER TEST.....	6
5	INSTRUMENT AND CALIBRATION	7
5.1	MEASURING INSTRUMENT CALIBRATION.....	7
5.2	TEST AND MEASUREMENT EQUIPMENT	7
6	TEST RESULTS	9
	APPENDIX I - PHOTOGRAPHS OF TEST SETUP	13



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-S175

Detailed EUT Description: See Item 2 of this report

Date of Test: January 6 ~ 7, 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-S175		
Housing Type	Plastic		
EUT Power Rating	DCV from Power Adapter		
Power Adapter Manufacturer	XPIQ	Model	MPU50-108
			PCM80PS24
Power Adapter Power Rating	For MPU50-108 I/P: 100-240VAC, 47-63Hz O/P: DC 11-13V, 2.08A For PCM80PS24 I/P: 100-240VAC, 50-60Hz, 1.1-0.45A O/P: DC 24V, 3.33A		
AC Power Cord Type	Unshielded, 1.8m (Detachable)		
DC Power Cable Type	Unshielded, 1.2m (Non-detachable) with a core		
CPU Manufacturer	Intel	Model	Celeron-M 600MHz
		**	Pentium M-1.4GHz
OSC/Clock Frequencies	100MHz		
Memory Capacity		Installed	256MB
LCD Panel Manufacturer	AUO	Model	M170EG01
Main Board Manufacturer	Advantech	Model	PCM-9896
		**	PCM-9686S
HDD Manufacturer	Fujitsu	Model	MHT2020AT (20GB)
**Battery Manufacturer	Advantech	Model	PPC-L126-BP

**I/O Port of EUT**

I/O Port Type	Q'TY	TESTED WITH
1). Serial Port	2	2
2). PS/2 Keyboard / Mouse Port	1	1
3). LAN Port	1	1
4). USB Port	2	2

****I/O Port of New Appearance**

I/O Port Type	Q'TY	TESTED WITH
1). Video Out Port (VGA)	1	1
2). Serial Port	2	2
3). PS/2 Keyboard / Mouse Port	1	1
4). Audio In Port	1	1
5). Audio Out Port	1	1
6). LAN Port	1	1
7). USB Port	2	2



3 TEST METHODOLOGY

3.1 DECISION OF FINAL TEST MODE

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

Mode	Resolution	CPU	Memory	Main Board	LCD Panel	Battery Pack	Power Adapter
1	1280 × 1024	Intel / Pentium-M 1.4GHz	256MB	Advantech / PCM-9686S	AUO / M170EG01	Advantech / PPC-L126-BP	XPIQ / PCM80PS24
2	1024 × 768						
3	800 × 600						

2. After preliminary test, found mode 1 producing the highest emission level, used this mode for all final test.

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	AQ19H2RT706123Z	FCC DoC	SAMSUNG	Shielded, 1.8m with two cores	Unshielded, 1.8m
2.	Modem	DM-1414	304012263	IFAXDM1414	ACEEX	Unshielded, 1.8m with a core	Unshielded, 1.8m
3.	PS/2 Keyboard	Y-SP29	SYU30272820	FCC DoC	Logitech	Shielded, 1.8m	N/A
4.	Mouse	M-MM43	LZE94052771	FCC DoC	Logitech	Shielded, 1.8m	N/A
5.	USB 2.0 External HDD	F12-UF	A0100214-39t0001	FCC DoC	TeraSys	Shielded, 1.8m	N/A
6.	USB 2.0 External HDD	F12-UF	A0100214-43b0010	FCC DoC	TeraSys	Shielded, 1.8m	N/A
7.	Multimedia Earphone	Axis-301	N/A	FCC DoC	Labtec	Unshielded, 2.0m	N/A
8.	Notebook PC (Remote)	COMPAQ NC 4010	CNU5191L58	FCC DoC	HP	LAN Cable: Unshielded, 10m with a core DC O/P: Unshielded, 1.8m with a core	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m 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 INSTRUMENT AND CALIBRATION

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 # 4				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCS30	847793/012	12/27/2006
LISN	EMCO	3825/2	9003-1628	07/28/2006
LISN	R&S	ENV 4200	830326/016	03/30/2006

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 # 5				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	ADVANTEST	R3132	91700456	N.C.R
EMI Test Receiver	R&S	ESVS10	846285/016	06/07/2006
Bilog Antenna	Sunol Sciences	JB1	A031905	04/15/2006
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	04	N.C.R
RF Switch	ANRITSU	MP59B	10877	N.C.R
Site NSA	CCS	N/A	N/A	12/09/2006

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

3 meter Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	ADVANTEST	R3271A	85060321	10/20/2006
Pre-Amplifier	HP	8449B	3008A00965	11/28/2006
Horn Antenna	EMCO	3115	9602-4659	04/24/2006
Turn Table	HD	HD320	N/A	N.C.R
Antenna Tower	HD	MA 240	N/A	N.C.R
Controller	HD	HD 100	N/A	N.C.R



6 TEST RESULTS

Line Conducted Emission

CCS Conduction Test 4

Job No.:51118101

Date:2006/1/4

Time:PM 07:24

Temp.()/Hum.(%):20 / 59 %

Tested by: Bill Cheng

Standard:CISPR 22 Class B

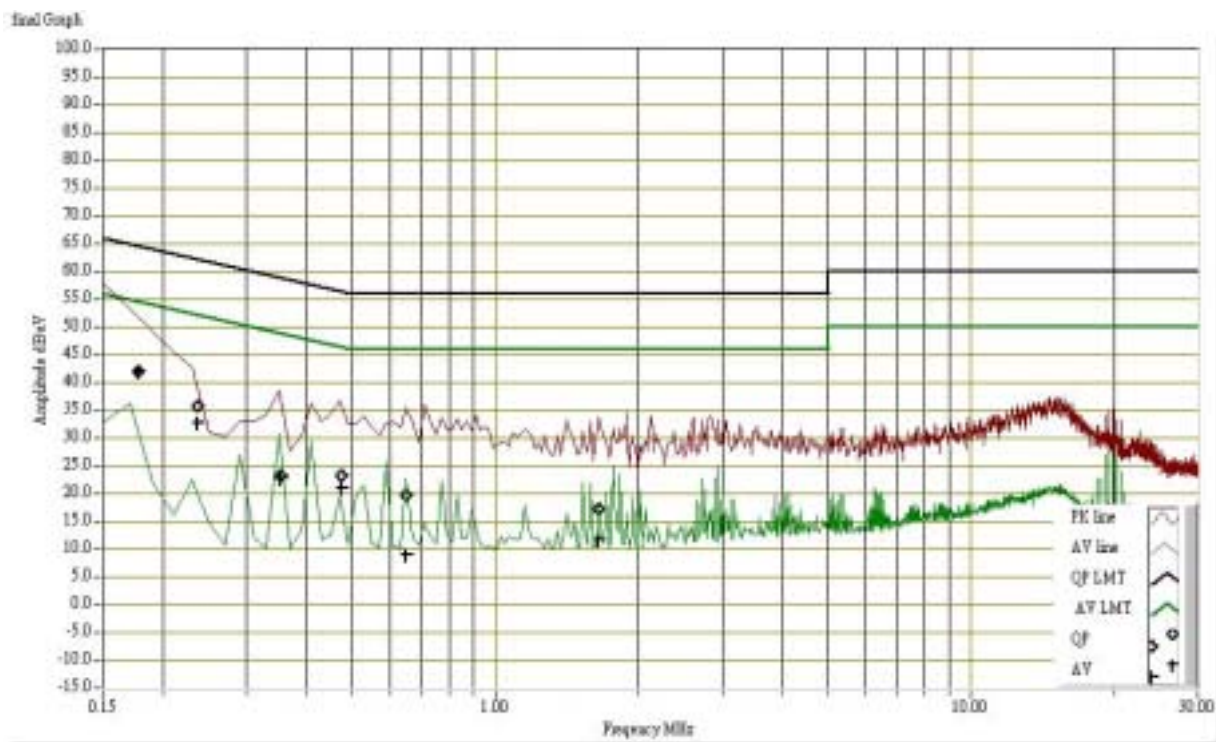
Power Source:120 Vac / 60Hz

Measured Line:L1

Company:ADVANTECH

Product : Panel PC with Touch Screen

Model :POC-S175



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
0.177	42.040	42.110	10.200	52.240	52.310	64.631	54.631	-12.391	-2.321	PASS
0.236	35.810	32.760	10.200	46.010	42.960	62.223	52.223	-16.213	-9.263	PASS
0.354	23.320	22.830	10.200	33.520	33.030	58.867	48.867	-25.347	-15.837	PASS
0.473	23.230	21.040	10.273	33.503	31.313	56.466	46.466	-22.963	-15.153	PASS
0.649	19.710	8.930	10.270	29.980	19.200	56.000	46.000	-26.020	-26.800	PASS
1.650	17.280	11.650	10.200	27.480	21.850	56.000	46.000	-28.520	-24.150	PASS

L1 = Line One (Live Line)



CCS Conduction Test 4

Job No.:51118101

Date:2006/1/4

Time:PM 06:56

Temp.()/Hum.(%):20 / 59 %

Tested by: Bill Cheng

Standard:CISPR 22 Class B

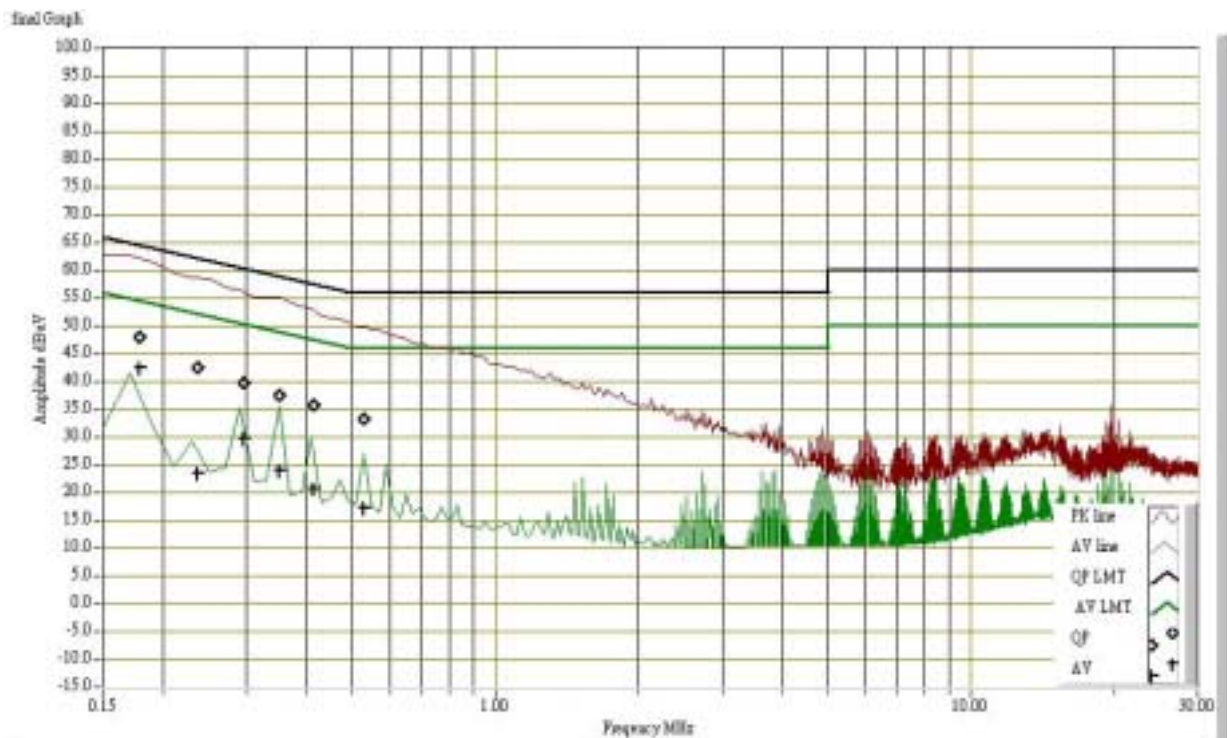
Power Source:120 Vac / 60Hz

Measured Line:L2

Company:ADVANTECH

Product :Panel PC with Touch Screen

Model :POC-S175



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
0.178	47.950	41.520	10.200	58.150	51.720	64.585	54.585	-6.435	-2.865	PASS
0.237	42.610	23.430	10.200	52.810	33.630	62.215	52.215	-9.405	-18.585	PASS
0.295	39.640	29.670	10.200	49.840	39.870	60.380	50.380	-10.540	-10.510	PASS
0.350	37.540	24.030	10.300	47.840	34.330	58.962	48.962	-11.122	-14.632	PASS
0.414	35.840	20.720	10.386	46.226	31.106	57.571	47.571	-11.345	-16.465	PASS
0.530	33.220	17.240	10.306	43.526	27.546	56.000	46.000	-12.474	-18.454	PASS

L2 = Line Two (Neutral Line)

**Radiated Emission (A)****Model:** POC-S175**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)
54.84	15.33	9.01	24.34	30.00	-5.66
192.54	11.35	14.55	25.91	30.00	-4.09
233.31	20.23	13.70	33.93	37.00	-3.07
263.82	7.47	15.44	22.91	37.00	-14.09
333.00	13.54	17.56	31.09	37.00	-5.91
356.40	9.37	18.24	27.61	37.00	-9.39
403.80	6.70	19.33	26.03	37.00	-10.97
495.40	4.43	22.26	26.69	37.00	-10.31
501.40	1.09	22.43	23.52	37.00	-13.48
538.60	0.82	23.09	23.91	37.00	-13.09
588.60	3.61	23.76	27.37	37.00	-9.62
831.40	4.63	27.84	32.48	37.00	-4.52
927.40	2.81	29.11	31.92	37.00	-5.08
991.00	3.58	30.68	34.26	37.00	-2.74

**Radiated Emission (B)****Model:** POC-S175**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)
66.47	9.96	9.35	19.30	30.00	-10.70
168.50	9.87	14.03	23.90	30.00	-6.10
233.00	18.80	13.68	32.48	37.00	-4.52
316.60	9.42	17.03	26.45	37.00	-10.55
333.40	15.34	17.57	32.91	37.00	-4.09
448.80	8.70	20.86	29.56	37.00	-7.44
561.40	7.19	23.44	30.62	37.00	-6.37
599.20	7.09	23.89	30.98	37.00	-6.02
626.60	5.66	24.38	30.04	37.00	-6.96
830.20	3.73	27.81	31.53	37.00	-5.47
875.00	5.50	28.70	34.20	37.00	-2.80
963.70	2.69	29.69	32.38	37.00	-4.62

**Radiated Emission – Above 1GHz (A)****Model:** POC-S175**Test Mode:** Mode 1**Temperature:** 15°C**Humidity:** 58% RH**Detector Function:** Pk/ A.V.**Antenna:** Vertical at 3m**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 (Pk) (dBuV/m)	Limit 3m (Pk) (dBuV/m)	Margin (dB)
1454.29	45.00	-10.51	34.49	73.90	-39.41
1751.43	43.75	-8.86	34.89	73.90	-39.01
2065.71	41.50	-7.36	34.14	73.90	-39.76
2191.43	47.75	-7.18	40.57	73.90	-33.33
2251.43	41.75	-7.09	34.66	73.90	-39.24
3935.71	36.00	-1.40	34.60	73.90	-39.30

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

**Radiated Emission – Above 1GHz (B)****Model:** POC-S175**Test Mode:** Mode 1**Temperature:** 15°C**Humidity:** 58% RH**Detector Function:** Pk/ A.V.**Antenna:** Horizontal at 3m**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 (Pk) (dBuV/m)	Limit 3m (Pk) (dBuV/m)	Margin (dB)
2440.00	37.75	-6.83	30.92	73.90	-42.98
3271.43	34.25	-3.93	30.32	73.90	-43.58
3664.29	32.50	-2.60	29.90	73.90	-44.00
4857.14	29.25	-0.46	28.79	73.90	-45.11
5385.71	28.50	1.05	29.55	73.90	-44.35
6478.57	26.00	2.38	28.38	73.90	-45.52

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

APPENDIX I - PHOTOGRAPHS OF TEST SETUP

LINE CONDUCTED EMISSION TEST



RADIATED EMISSION TEST

