

IEC SYSTEM FOR CONFORMITY TESTING
AND CERTIFICATION OF ELECTRICAL
EQUIPMENT (IECEE)
CB SCHEME

SYSTÈME CEI D'ESSAIS DE CONFORMITÉ
ET DE CERTIFICATION DES EQUIPEMENTS
ELECTRIQUES (IECEE)
METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product
Produit

Industrial Computer

Name and address of the applicant
Nom et adresse du demandeur

Advantech Co. Ltd
4th 108-3 Ming-Chuan Rd, Shing-Tien City, Taipei Hsien, Taiwan

Name and address of the manufacturer
Nom et adresse du fabricant

Advantech Co. Ltd
4th 108-3 Ming-Chuan Rd, Shing-Tien City, Taipei Hsien, Taiwan

Name and address of the factory
Nom et adresse de l'usine

See Appendix

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

100-240 Vac, 50-60 Hz, 8-4A, Class I

Trade mark (if any)
Marque de fabrique (si elle existe)

ADVANTECH

Model/type Ref.
Ref. de type

IPC-615XX-XXXX, ACP-4000XX-XXXX, IPC-610XXX-XXXX and IPC-610XXH-ACH

Additional information (if necessary)
Information complémentaire (si nécessaire)

IP20. Where X may be any alphanumeric character or blank. This CB certificate is an appendix to earlier CB certificate No. 6180-A1 issued 2003-05-23 due to add of a new model, change of model designation for type IPC-610XXX-XXXX, add of a factory and use of alternative components.

A sample of the product was tested and found to be in conformity with
Un échantillon de ce produit a été essayé et a été considéré conforme à la

PUBLICATION
IEC 60950:1999

EDITION
3rd

as shown in the Test Report Ref. No.
which form part of this certificate
comme indiqué dans le Rapport d'essais numéro de référence
qui constitue une partie de ce certificat

E180881-A2-CB-1 amendment 2 2004-07-02

This CB Test Certificate is issued by the National Certification Body
Ce Certificate d'essai OC est établi par l'Organisme National de Certification

Date 2004-08-10

Signature
Karina Christiansen
Certification Manager

UL International Demko A/S
Lyskaer 8, P.O. Box 514
DK-2730 Herlev, Denmark
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Fax: +45 44856500



An Affiliate of
Underwriters
Laboratories Inc.®

Internal Ref.:
Jakob Petersen

Appendix to CB Certificate No. 6180-A2

Production Site:

Advantech Co Ltd
5th Fl 1 Lane 169 Kang-Ning St
Xi-Zhi Town
Taipei Hsien Taiwan.

Advantech Co Ltd
3rd Fl 10 Lane 130 Ming Chuan Rd
Hsin-Tien
Taipei Hsien Taiwan

Superior Co Ltd
Tiensong Area Qingxing Town
Dongguan Guangdong China

Advantech Co Ltd
No. 600 Han-Pu Road Yu-Shan
Kun-Shan Jiangsu China

Beijing Yan Hua Xing Ye Electronic Science & Technology Co., Ltd.
No.7, 6th Street, Shang Di Zone, Haidian District, Beijing, P.R.China.

Herlev, 2004-08-10


Karina Christiansen
Certification Manager

UL International Demko A/S

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Laboratories Inc.®**

COVER PAGE FOR TEST REPORT

Test Item Description:	Industrial Computer
Model/Type Reference:	IPC-615XX-XXXX, ACP-4000XX-XXXX, IPC-610XXX-XXXX and IPC-610XXH-ACH where X may be any alphanumeric character or blank.
Rating(s):	I/P : 100-240Vac, 50-60 Hz, 8-4A
Standards:	IEC60950, Third Edition (1999)
Applicant Name and Address:	ADVANTECH CO LTD 4TH FL 108-3 MING-CHUAN RD SHING-TIEN CITY TAIPEI HSIEN TAIWAN
Factory Location(s):	(1) ADVANTECH CO LTD 5TH FL 1 LANE 169 KANG-NING ST XI-ZHI TOWN TAIPEI HSIEN TAIWAN (2) ADVANTECH CO LTD 3RD FL 10 LANE 130 MING CHUAN RD HSIN-TIEN TAIPEI HSIEN TAIWAN (3) SUPERIOR CO LTD TIENSONG AREA QINGXING TOWN DONGGUAN GUANGDONG CHINA (4) ADVANTECH CO LTD NO. 600 HAN-PU ROAD YU-SHAN KUN-SHAN JIANGSU CHINA (5) BJING YAN HUA XING YE ELECTRONIC SCIENCE & TECHNOLOGY CO .,LTD NO.7, 6TH STREET, SHANG DI ZONE, HAIDIAN DISTRICT, BEIJING, P.R.CHINA

This Report includes the following parts, in addition to this cover page:

1. Specific Technical Criteria
2. Clause Verdicts
3. Critical Components
4. Test Results
5. National Differences
6. Enclosures

The original report was modified on 2004-07-02 to include the following changes/additions:

- Additional information:

- This test report shall be read in conjunction with the original report, number
- 1. E180881-A2-CB-1, issued February 11, 2003, with CB Certificate (DK-6180) issued February 13, 2003.
- 2. E180881-A2-CB-1, Amendment 1. issued May 22, 2003, with CB Certificate (DK-6180-A1), issued May 23, 2003.

- This report has been amended, due to:

1. Change Model name from IPC-610XXX-XXXX-H to IPC-610XXX-XXXX
2. Add new model IPC-610XXH-CAN
3. Alternate Mainboard
4. Alternate DC Fans
5. Alternate Power Supply
6. Add Factory

Beijing Yan Hua Xing Ye Electronic Science & Technology Co ., Ltd.

All applicable tests according to the above standard(s) have been carried out.

Test results are valid only for the tested equipment.

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Amendments and corrections can be reproduced only with the original CB Test Report.

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IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

TEST REPORT IEC 60950 Safety of information technology equipment	
Report Reference No	E180881-A2-CB-1
Compiled by (+ signature)	Rasul M. Balacu 
Reviewed by (+ signature)	Jakob Petersen 
Approved by (+ signature)	Jakob Petersen
Date of issue	2003-02-11
CB Testing Laboratory	UL International Demko A/S
Address	Lyskaer 8, 2730, Herlev, Denmark
Testing location/procedure	CBTL <input checked="" type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/> WMT <input type="checkbox"/>
Address	UL International Demko A/S, Lyskaer 8, 2730, Herlev, Denmark
Applicant's name	ADVANTECH CO LTD
Address	4TH FL 108-3 MING-CHUAN RD SHING-TIEN CITY TAIPEI HSIEN TAIWAN
Test specification:	
Standard	IEC60950, Third Edition (1999)
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	I950__F/00-03
TRF originator	FIMKO
Master TRF	dated 00-02
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Test item description	Industrial Computer
Trade Mark	ADVANTECH
	
Model/Type reference	IPC-615XX-XXXX, ACP-4000XX-XXXX, IPC-610XXX-XXXX and IPC-610XXH-ACH where X may be any alphanumeric character or blank.
Manufacturer	SAME AS APPLICANT

Issue Date: 2003-02-11
Amendment 2 2004-07-02

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Report Reference #

E180881-A2-CB-1

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

Marking Plate - Refer to Enclosure titled Miscellaneous for copy.

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

Particulars: test item vs. test requirements

Equipment mobility.....: stationary
Operating condition.....: continuous
Mains supply tolerance (%)......: +6%, -10%
Test for IT power systems.....: No
IT testing, phase-phase voltage (V).....: N/A
Class of equipment: Class I (earthed)
Mass of equipment (kg): 18Kg
Protection against ingress of water.....: IP 20

Possible test case verdicts:

- test case does not apply to the test object: N / A
- test object does meet the requirement: P(Pass)
- test object does not meet the requirement: F(Fail)

General remarks:

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by a NCB in accordance with IEC 60950-02.

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report a point is used as the decimal separator.

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

General Product Information:**Report Summary**

The original report was modified on 2004-07-02 to include the following changes/additions:

- Additional information:

- This test report shall be read in conjunction with the original report, number
- 1. E180881-A2-CB-1, issued February 11, 2003, with CB Certificate (DK-6180) issued February 13, 2003.
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- This report has been amended, due to:

1. Change Model name from IPC-610XXX-XXXX-H to IPC-610XXX-XXXX
2. Add new model IPC-610XXH-CAN
3. Alternate Mainboard
4. Alternate DC Fans
5. Alternate Power Supply
6. Add Factory

Beijing Yan Hua Xing Ye Electronic Science & Technology Co ., Ltd.

Product Description

Power Supply, HDD, CD-ROM, FDD and motherboard with CPU housed in metal enclosures.

Model Differences

Models ACP-4000XX-XXXX, IPC-610XXH-ACH and IPC-610XXX-XXXX are similar to Model IPC-615XX-XXXX except for model designation.

Additional Information

N/A

Technical Considerations

The product was submitted and tested for use at the manufacturer's recommended ambient temperature (Tmra) of:

40 °C

The power supply means are:

Detachable power cord, Pluggable A or B, ,

The product is intended for use on the following systems:

TN

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

The equipment disconnect device is considered to be:	Appliance inlet
The following circuit locations (with circuit/schematic designation) were investigated as a limited power source:	PS2 and USB
Engineering Conditions of Acceptability	
When installed in an end-product, consideration must be given to the following:	

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

1.5	Components		Pass
1.5.1	Comply with IEC 950 or relevant component standard	(see appended table 1.5.1)	Pass

1.6	Power Interface		Pass
1.6.1	AC power distribution systems	AC power distribution systems are classify as TN.	Pass
1.6.2	Input current	The steady state input current of the equipment did not exceed the RATED CURRENT by more than 10% under NORMAL LOAD.(see appended table 1.6.2)	Pass
1.6.3	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	N/A
1.6.4	Neutral conductor		N/A

1.7	Marking and Instructions		Pass
1.7.1	Power rating	Rating marking readily visible to operator see below for details.	Pass
	Rated voltage(s) or voltage range(s) (V)	AC 100-240 VAC	Pass
	Symbol for nature of supply for d.c.	AC source	N/A
	Rated frequency or frequency range (Hz).....	50-60Hz	Pass
	Rated current (A).....	8-4 A	Pass
	Manufacturer's name/Trademark	Advantech Co., Ltd. / ADVANTECH	Pass
	Type/model.....	IPC-615XX-XXXX, ACP-4000XX-XXXX, IPC-610XXX-XXXX, IPC-610XXH-ACN, where X may be any alphanumeric character or blank.	Pass
	Symbol of Class II	Class I equipment.	N/A
	Other symbols.....	Additional symbols may be provided when submitted for National Approval.	Pass
	Certification marks.....	UL, c-UL	Pass
1.7.1	Type/model.....	IPC-615XX-XXXX.	Pass

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

		ACP-4000XX-XXXX, IPC-610XXX-XXXX, IPC-610XXH-ACN, where X may be any alphanumeric character or blank.	
--	--	---	--

2.5	Limited Power Sources		Pass
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output	The USB output comply with table 2B under normal operation condition and the Polyswitch used in USB/PS2 connector.	Pass
	Regulating network limited output under normal operating and single fault condition		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA)	5.07 Vmax, 2.33 Amax, 10.89 VAmx	-
	Current rating of overcurrent protective device (A):	See Table 1.5.1.	-
2.5	Output voltage (V), output current (A), apparent power (VA)	5.07 Vmax, 2.33 Amax, 10.89 VAmx	-

2.6.3.3	Resistance (Ohm) of earthing conductors and their terminations, test current (A)	0.02 ohm (30A) 0.02 ohm (40A) (With power supply, Zippy, Model P1U-6200P) 0.35 Vdrop with power supply FSP Group Inc, Type FSP300-60PLN(3)	Pass
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4.5	Thermal Requirements		Pass
4.5.1	Temperature rises	(see appended table)	Pass
	Normal load condition per Annex L.....	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established.	Pass

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	Electric Strength		Pass
5.2.1	General	Based on the electric strength test the use of the insulating materials within the equipment is satisfactory.	Pass
5.2.2	Test procedure	No insulation breakdown detected during the test.(see appended table)	Pass

5.3	Abnormal Operating and Fault Conditions		Pass
5.3.1	Protection against overload and abnormal operation	See below.	Pass
5.3.2	Motors	Approval DC Fan used. All disk drive motors evaluated as part of component evaluation.	Pass
5.3.3	Transformers	The protection of the power supply and transformer are approved with the approval of the power supply.	Pass
5.3.4	Functional insulation.....:	Functional insulation complies with the requirements (a), (b), or (c).	Pass
5.3.5	Electromechanical components	The equipment does not have any electromechanical components in the secondary.	Pass
5.3.6	Simulation of faults	Faults in primary and secondary components and Functional insulation were already considered during the approval of the power supply. - Blocked ventilation openings test. - Fan stalled test. - Connector overload test. See appended table details.	Pass

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
1. Power Supply	Zippy	MRT-6300P-R	I/P: 100-240Vac, 60-50Hz, 6-3A. O/P: +5V/25A, -5V/0.5A, +12V/16A, -12V/0.8A, 3.3V/18A, +5Vsb/2A.	IEC 60950	UL, TUV Cert. No. JPTUV-003873	
1. Power Supply	PRT	PRM401	I/P: 100-240Vac, 50/50Hz, 8/5A. O/P: +5V/50A, -5V/1.0A, +12V/27A, -12V/3.0A, 3.3V/30A, +5Vsb/1.0A.	IEC 60950	UL, TUV Cert. No. DE 2-002938-M3	
1. Power Supply	PRT	PRM400	I/P: 100-240Vac, 50/50Hz, 8A. O/P: +5V/42A, -5V/1.0A, +12V/14A, -12V/1.0A, 3.3V/20A, +5Vsb/0.75A.	IEC 60950	UL, TUV Cert. No. DE 2-002938-M3	
1. Power Supply	Zippy	P1U-6200P	I/P: 100-240 Vac, 47-63 Hz, 4-2 A. O/P: +5V/16A, -5V/0.2A, +12V/9A, -12V/0.7A, 3.3V/14A, +5Vsb/1.5A.	IEC 60950	UL, TUV Cert. No. JPTUV-002570	
Alternate, Power Supply	FSP Group Inc.	FSP300-60PLN(3)	I/P: 100-240 Vac, 50-60 Hz, 10A. O/P: +5V/30A, -5V/0.3A, +12V/18A, -12V/0.8A, +3.3V/28A, +5Vsb/2.0A	UL 60950-1, IEC 60950	UL, Nemko, CB (by Nemko Certificate No. NO 15238)	
2. Hard Drive (Optional)	Various	--	+5V or +12V, maximum 1A	EN 60950, UL 1950/60950	UL, TUV	

IEC 60950					
Clause	Requirement + Test		Result - Remark		Verdict
3. Floppy Drive (Optional) (two provided)	Various	--	+5V or +12V, maximum 1A	EN 60950, UL 1950/60950	UL, TUV
4. Lithium Battery	Dallas	DS12887	--	--	UL, --
4 Alternate, RTC Battery	Rayovac Corp.	BR2335	3.0Vdc, 300mAh	UL1416	UL, --
5. CPU Fan	AAVID	1455223	+12Vdc, 0.16A	EN 60950	UL, TUV
6. Keyboard Fuse (F2)	Bel	MQ	125V, 3A	--	UL, --
6. Keyboard Fuse (F2)	Littelfuse	251	125V, 3A	--	UL, --
6. Keyboard Fuse (F2)	Cooper	MCR/TRW	125V, 3A	--	UL, --
7. System Fan	Delta	WFB1212H	+12V, 0.45A, 86.5CFM	UL507, EN 60950	UL, TUV
7. System Fan	Delta	WFB1212HE	+12V, 0.50A, 106CFM	UL507, EN 60950	UL, TUV
7. System Fan	Adda	AD1212HB-A71	+12V, 0.34A, 61.9CFM	UL507, EN 60950	UL, TUV
7. Alternate, System Fan	Delta electronics inc	AFB1212H	12Vdc, 0.35A max., 74.41CFM min.	UL 60950, EN 60950	UL, VDE
7. Alternate, System Fan	Delta electronics inc	EFB1212H	12Vdc, 0.41A max., 72.04CFM min.	UL 60950, EN 60950	UL, VDE
7. Alternate, System Fan	Delta electronics inc	EFB1212SH	12Vdc, 0.75A max., 102.06CFM min.	UL 60950, EN 60950	UL, VDE
7. Alternate, System Fan	Yate Loon Electronics Co., Ltd.	D12BH-12	12Vdc, 0.3A max., 77.2CFM min.	UL 60950, EN 60950	UL, TUV
7. Alternate, System Fan	Asia Vital Components Co., Ltd.	E1238B12H	12Vdc, 0.5A max., 50.338CFM min.	UL 60950, EN 60950	UL, TUV
8. Polyswitch	Raychem	SMD-150-2018	5V, 1.1A	UL1434	UL, UL
8. Alternate, Polyswitch for USB and PS2	Raychem Circuit Protection Div	MiniSMDC110	6Vdc, 1.1A	UL1434	UL, TUV
9. Drive - (CD-ROM)	NEC	CDR-1900A	5/12 V, 1.0/1.2 A	UL1950/60950, EN60950, EN60825-1	UL, TUV
1) an asterisk indicates a mark which assures the agreed level of surveillance					

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: electrical data (in normal conditions)						Pass
fuse #	I rated (A)	U (V)	P (W)	I (mA)	I fuse (mA)	condition/status	
--	--	90	333	3300	3300	MNL/60 Hz	
--	8	100	330	2920	2920	MNL/50 Hz	
--	8	100	330	2920	2920	MNL/60 Hz	
--	4	240	318	1420	1420	MNL/50 Hz	
Alternate Power Supply FSP Group Inc Type FSP300-60PLN(3)	--	--	--	--	--	--	
--	--	90V/50 Hz	122.1	1412	1412	Maximum Normal Load	
--	--	90V/60 Hz	122.2	1414	1414	Maximum Normal Load	
--	8	100V/50 Hz	121.7	1218	1218	Maximum Normal Load	
--	8	100V/60 Hz	121.8	1221	1221	Maximum Normal Load	
--	4	240V/50 Hz	118.2	567	567	Maximum Normal Load	
--	4	240V/60 Hz	118.2	581	581	Maximum Normal Load	
--	--	254V/50 Hz	118.3	548	548	Maximum Normal Load	
--	--	254V/60 Hz	118.3	561	561	Maximum Normal Load	
--	--	264V/50 Hz	118.5	533	533	Maximum Normal Load	
--	--	264V/60 Hz	118.3	545	545	Maximum Normal Load	
supplementary information:							

4.5	TABLE: temperature rise measurements			Pass
	test voltage (V)	:	See below	—
	t1 (°C)	:	--	—
	t2 (°C)	:	--	—
temperature rise dT of part/at:			dT (K)	required dT (K)
T1 coil			8.7/3.6	50
T1 core			11.7/6	50

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict
C1 body		4.4/2.3	45
L7 coil		13.4/5	65
T3 coil		15.8/8.8	50
T3 core		13.3/7.1	50
Enclosure inside near T1		3.6/1.9	--
Main board		--	--
U15 body		10.4/9.4	--
U14 body		8.8/7.9	--
U17 body		7.9/6.8	--
PWB near CPU		5.3/4.3	65
PWB near Q7		26.9/25.7	65
RTC battery body		7/5.7	--
Alternate Power Supply FSP Group Inc, Type FSP300-60PLN(3)		Maximum Normal Load at 90 V, 60 Hz, Duration 1.63 hrs.	--
Ambient		24.5	--
Power supply AC inlet body		14.6	--
Power supply C6 body		6.5	45
Power supply T1 coil		15.2	50
Power supply T1 core		16.2	50
Power supply T2 coil		25.3	50
Power supply T2 core		15.8	50
Power supply LF2 coil		28.7	55
Power supply LF1 coil		16.4	55
Main board L15 coil		28.2	55
Main board C92 body		12.3	45
Main board PWB under Q14		22.1	65
Main board PWB under CPU		20.1	65
Main board PWB under U22		16.8	65
Main board PWB under U26		12.9	65
Main board BT1 body		9.4	--
CD-ROM body near motor		6.0	--
HDD body near motor		10.9	--
FDD body near motor		5.1	--
Enclosure outside near power supply		9.6	30
--		Maximum Normal Load at 264 V, 60Hz, Duration 1.75 hrs	--
Ambient		24.7	--
Power supply AC inlet body		13.9	--
Power supply C6 body		6.4	45
Power supply T1 coil		14.8	50
Power supply T1 core		15.8	50
Power supply T2 coil		25.0	50
Power supply T2 core		15.6	50
Power supply LF2 coil		28.4	55

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

Power supply LF1 coil		15.2		55	
Main board L15 coil		28.2		55	
Main board C92 body		12.1		45	
Main board PWB under Q14		21.7		65	
Main board PWB under CPU		20.0		65	
Main board PWB under U22		17.1		65	
Main board PWB under U26		13.2		65	
Main board BT1 body		7.6		--	
CD-ROM body near motor		5.6		--	
HDD body near motor		10.6		--	
FDD body near motor		4.6		--	
Enclosure outside near power supply		9.0		30	
Alternate Power Supply FSP Group Inc, Type FSP300-60PLN(3)		Maximum Normal Load at 90 V, 60 Hz, Duration 1.63 hrs.		--	
Ambient		24.5		--	
Power supply AC inlet body		14.6		--	
Power supply C6 body		6.5		45	
Power supply T1 coil		15.2		50	
Power supply T1 core		16.2		50	
Power supply T2 coil		25.3		50	
Power supply T2 core		15.8		50	
Power supply LF2 coil		28.7		55	
Power supply LF1 coil		16.4		55	
Main board L15 coil		28.2		55	
Main board C92 body		12.3		45	
Main board PWB under Q14		22.1		65	
Main board PWB under CPU		20.1		65	
Main board PWB under U22		16.8		65	
Main board PWB under U26		12.9		65	
Main board BT1 body		9.4		--	
CD-ROM body near motor		6.0		--	
HDD body near motor		10.9		--	
FDD body near motor		5.1		--	
Enclosure outside near power supply		9.6		30	
temperature rise dT of winding:	R ₁ (Ω)	R ₂ (Ω)	dT (K)	required dT (K)	insulation class
supplementary information:					

5.2	TABLE: electric strength tests and impulse tests	Pass
test voltage applied between:	test voltage (V)	breakdown Yes / No
With power supply, Zippy, Model P1U-6200P	--	--
Primary to Earth	3000 Vdc	No

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

Alternate Power Supply, FSP Group Inc, Type FSP300-60PLN(3)	--	--
Primary to SELV	4242	No
Primary to Earth	3000	No
supplementary information:		

5.3	TABLE: fault condition tests						Pass
	ambient temperature (°C)				40°C		—
	model/type of power supply				See appended table 1.5.1		—
	manufacturer of power supply				See appended table 1.5.1		—
	rated markings of power supply				See appended table 1.5.1		—
component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result	
02 CPU fan	Stalled	240	3.5 hrs	--	--	NB, NC, NT. Unit operated normally, T1 coil: 32.5(C	
03 Left system fan	Stalled	240	2 hrs	--	--	NB, NC, NT. Unit operated normally, T1 coil: 33.5(C	
04 Right system fan	Stalled	240	1.5 hrs	--	--	NB, NC, NT. Unit operated normally, T1 coil: 33.6(C	
05 Power supply fan	Stalled	240	2 hrs	--	--	NB, NC, NT. Unit operated normally, T1 coil: 43.5(C	
VGA pin9, 13, 14	Overload	240	1 hr	--	--	NB, NC, NT.	
Alternate Power Supply, FSP Group Inc, Type FSP300-60PLN(3)	--	--	--	--	--	--	
Ventilation openings	Blocked	240 / 60Hz	3.5 hrs	-	0.58	NB, NC, NT	
System fan	Stalled	240 / 60Hz	3.0 hrs	-	0.58	NB, NC, NT	
Power fan	Stalled	240 / 60Hz	2.0 hrs	-	0.58	NB, NC, NT	
CPU fan	Stalled	240 / 60Hz	2.5 hrs	-	0.58	NB, NC, NT, unit shutdown	
supplementary information:							

Enclosure

National Differences

(Total 32 Pages including this Cover Page)

Argentina
Australia / New Zealand
Austria**
Belgium**
China
Czech Republic*
Denmark
Finland
France**
Germany
Greece**
Group
Hungary*
India*
Ireland
Israel*
Italy**
Japan
Korea
Netherlands**
Norway
Poland*
Russia*
Singapore
Slovakia*
Slovenia*
South Africa*
Spain
Sweden
Switzerland
USA / Canada
United Kingdom
Yugoslavia*

* No National Differences Declared

** Only Group Differences

China - Differences to IEC60950, Third Edition (1999)			
1.4.5	The tolerance of rated voltage in IEC 60950 from +6% to -10% is changed by GB4943-2001 to tolerance of +10% and -10%		N/A
1.7.1	Markings for supply voltage and frequency shall include China's mains voltage. According to GB4943-2001 a single rated voltage is expressed as 220 V		N/A
1.7.1	- When a rated voltage range is given, the range covers 220 V		N/A
1.7.1	- When a variety of rated voltages or rated voltage ranges are given, one of them is 220 V, and unit shall be set as 220 V when shipped from the factory		N/A
1.7.1	- Rated frequency is 50 Hz or rated frequency range includes 50Hz		N/A
1.7.1	- A unit not provided with a means for direct connection to the AC mains supply does not need not be marked with any electrical rating		N/A
1.7.12	According to GB4943-2001 instructions and equipment markings related to safety are provided in standardized Chinese		N/A
3.2.1	Power supply plugs that are connecting equipment to AC mains supply are in accordance with requirements of Chinese standard GB1002		N/A

Korea - Differences to IEC60950, Third Edition (1999)			
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains comply with the Korean requirement (KSC 8305)	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; proper application is determined by the country's local Certification Body.	N/A
7	Addition: EMC. The apparatus shall comply with the relevant CISPR requirements	It should be provided when national approval.	N/A

Japan - Differences to IEC60950, Third Edition (1999)			
1.2.4.101	Addition: Definition of CLASS 0I EQUIPMENT	The unit is Class I unit and cannot use the application	N/A
1.2.12.1	Replacement: FLAMMABILITY CLASSIFICATION OF MATERIALS: "The recognition of the burning behaviour of materials and their ability to extinguish if ignited. Materials are classified as in 1.2.12.2 to 1.2.12.9, and 1.2.12.101 when tested in accordance with annex A"		N/A
1.2.12.101	Addition: Definition of VTM CLASS MATERIAL		N/A
1.7.101	Addition: Marking for CLASS 0I EQUIPMENT The following instruction is indicated on the visible place of the mains plug or the main body: "Provide an earthing connection"		N/A
1.7.101	The following instruction is indicated on the visible place on the main body or written in the operating instructions: "Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains."		N/A
2.1.1.1	Replace: "IEC 60083" by "IEC 60083 or JIS C 8303" in 2.1.1.1 b)		N/A
2.6.3.1	Add the following after 1st paragraph: "This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT"		N/A
2.6.4.1	Replace 2nd sentence in 1st paragraph: "For CLASS I EQUIPMENT with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal"		N/A
2.6.5.4	Replace 1st sentence: "Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:"		N/A

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2.6.101	Addition:Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing not used for equipment having a rated voltage exceeding 150 V		N/A
2.6.101	For plugs with a lead wire for earthing, the lead wire is not earthed by a clip		N/A
2.6.101	CLASS 0I EQUIPMENT provided with an earthing terminal or lead wire for earthing in the external where easily visible		N/A
3.2.5	Delete the following statement from a note 1 in Table 3B: "For RATED CURRENT up to 3A, a nominal cross-sectional area of 0.5 mm ² is permitted in some countries provided that the length of the cord does not exceed 2 m"		N/A
4.2.8	Add the following informative remark after the last sentence: "IEC 61965 is also applicable instead of IEC 60065"		N/A
4.5.1	Add the following to note 5) of Table 4A, Part 2: "With regard to Table 4A, insulating materials complying with Japanese requirements (refer to Japanese differences for IEC 60335-1 3rd Edition in CB Bulletin 101B) are also acceptable"		N/A
4.5.1	Add a note reference 7) to "50", in the right column of Table 4A, Part 1 and add a note 7 to Table 4A, Part 2 as follows: "7) This value apply only to wiring or cords complying with relevant IEC standards. Others comply with Japanese requirements (refer to Japanese differences for IEC 60335-1 3rd Edition in CB Bulletin 101B)"		N/A
4.7.3.2	Add the following in 7th paragraph: "- for thin materials, e.g., flexible printed boards, etc., used inside equipment, be of FLAMMABILITY CLASS VTM-2 or better"		N/A
5.1.6	Replace Table 5A to include maximum TOUCH CURRENT values for CLASS 0I EQUIPMENT		N/A
5.3.8.2	Replace 3rd Item as follows: "- BASIC INSULATION between the PRIMARY CIRCUIT and accessible conductive parts of CLASS I or 0I EQUIPMENT;"		N/A
Annex A	Add the subclause A.101titled: "Flammability tests for classifying materials VTM" and the following: "Thin sheet materials shall comply with ISO 9773"		N/A

Annex G	Add to the Note for Table G.1. "2. In Japan, MAINS TRANSIENT VOLTAGE for equipment with a Nominal AC MAINS SUPPLY VOLTAGE of 100V is to be decided based on the column where Nominal AC MAINS SUPPLY VOLTAGE in Table G.1 is 150V"		N/A
Annex P	Add: "IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes"		N/A
Annex U	Replace 2nd paragraph as follows: "This annex covers to round winding wires having diameters between 0.05 mm and 5.00 mm"		N/A
U.2.1	Replacement:Electric strength "The test sample is prepared per IEC 60851-5:1997, 4.4.1 (for a twisted pair and subjected to the test of 5.2.2, with a test voltage not less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 3000 V, or; - for REINFORCED INSULATION, 6000 V"		N/A
U.2.2	Replacement:Flexibility and adherence Test 8 of IEC 60851-3:1996, 5.1.1, using the mandrel diameter of Table U.1 (mm)		N/A
U.2.2	Test voltage not less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard and not less than: - 1500 V for BASIC INSULATION or SUPPLEMENTARY INSULATION, or; - 3000 V for REINFORCED INSULATION		N/A

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Miscellaneous

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Supplement Id	Description
7-03	Label-2

ADVANTECH[®]

ADVANTECH CO., LTD.
<http://www.advantech.com>
MADE IN TAIWAN

Industrial Computer

MODEL NO: IPC-610XXH-ACN

INPUT: 100-240Vac, 50-60Hz, 8-4A



LISTED
I.T.E
E180881



Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

This device complies with the requirements in part 15 of the FCC rule: Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

