

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

SYSTÈME CEI D'ESSAIS DE CONFORMITÉ
ET DE CERTIFICATION DES ÉQUIPEMENTS
ÉLECTRIQUES (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 Fl, 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 Fl, 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

115/230 Vac, 50/60 Hz, 10/5A, Class I

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

ADVANTECH

Model/type Ref.
Ref. de type

IPC-6908XXX-XXXXXX

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 CB certificate No. 2003-06-30 due to add of alternative components

PUBLICATION

EDITION

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*

IEC 60950:1999

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-A19-CB-1, with Amendment 1, date 2004-04-27

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 2004-05-06

Signature

Karina Christiansen
Certification Manager

UL International Demko A/S
Lyskaer 8, P.O. Box 514
DK-2730 Herlev, Denmark
Telephone: +45 44856565
Fax: +45 44856500



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**Underwriters
Laboratories Inc.®**

Internal Ref.:
Jakob Petersen

Appendix to CB Certificate No. 6768/A1

Production Site:

1) Advantech Co., Ltd.

5th, Fl. 1, Lane 169 Kang-Ning Street, Xi-Zhi Town Taipei Hsien, Taiwan.

2) Advantech Co., Ltd.

3rd Fl, 10 Lane 130, Ming Chuan Rd, Hsin-Tien City, 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, Jiang Su, China.

Herlev, 2004-05-06


Karina Christiansen
Certification Manager

UL International Demko A/S

Lyskaer 8, P.O. Box 514
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Fax: +45 44856500



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COVER PAGE FOR TEST REPORT

Test Item Description:	Industrial Computer
Model/Type Reference:	IPC-6908XXX-XXXXXX, where X may be any alphanumeric character or blank.
Rating(s):	I/P : 115/230Vac, 50/60 Hz, 10/5A
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 STREET, XI-ZHI TOWN TAIPEI HSIEN, TAIWAN. 2) ADVANTECH CO., LTD. 3RD FL, 10 LANE 130, MING CHUAN RD, HSIN-TIEN CITY, TAIPEI HSIEN 231, 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, JIANG SU, 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

The original report was modified on 2004-04-27 to include the following changes/additions:

- This test report shall be read in conjunction with the original report, number:
 1. E180881-A19-CB-1, issued June 30, 2003, with CB Certificate (DK-6768), issued June 30, 2003.
- This test report has been amended, due to:
 1. Adding alternate power supply and DC fans
- Only limited tests were deemed necessary.
 1. Input Test.
 2. Earthing Test II
 3. Enclosure Push Test
 4. Impact Test
 5. Heating Test
 6. Touch Current Test
 7. Electric Strength Test
 8. Abnormal Operation Test

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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Issue Date: 2003-06-30
Amendment 1 2004-04-27

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Report Reference #

E180881-A19-CB-1

TEST REPORT IEC 60950 Safety of information technology equipment	
Report Reference No	E180881-A19-CB-1
Compiled by (+ signature)	Rasul M. Balacu
Reviewed by (+ signature)	Jakob Petersen
Approved by (+ signature)	Jakob Petersen
Date of issue	2003-06-30
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
ADVANTECH®	
Model/Type reference	IPC-6908XXX-XXXXX, where X may be any alphanumeric character or blank.
Manufacturer	SAME AS APPLICANT
Rating	I/P : 115/230Vac, 50/60 Hz, 10/5A

TRF No.: 1950__F

UL International Demko A/S

TRF originator: FIMKO

Issue Date: 2003-06-30
Amendment 1 2004-04-27

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Report Reference #

E180881-A19-CB-1

Marking Plate - Refer to Enclosure titled Miscellaneous for copy.

Particulars: test item vs. test requirements

Equipment mobility: movable
Operating condition: continuous
Mains supply tolerance (%): +10%, -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): 11.86 Kg
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 60335-1.

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.

General Product Information:	
Report Summary	
<p>The original report was modified on 2004-04-27 to include the following changes/additions:</p> <ul style="list-style-type: none">- This test report shall be read in conjunction with the original report, number: 1. E180881-A19-CB-1, issued June 30, 2003, with CB Certificate (DK-6768), issued June 30, 2003.- This test report has been amended, due to: 1. Adding alternate power supply and DC fans- Only limited tests were deemed necessary. 1. Input Test. 2. Earthing Test II 3. Enclosure Push Test 4. Impact Test 5. Heating Test 6. Touch Current Test 7. Electric Strength Test 8. Abnormal Operation Test	
Product Description	
Power Supply, HDD, FDD, CD-ROM, CPU and mainboard with metal enclosure.	
Model Differences	
N/A	
Additional Information	
The CPU was Model Pentium 4, 2.0 GHz.	
Technical Considerations	
The product was submitted and tested for use at the manufacturer's recommended ambient temperature (Tmra) of:	50°C
The power supply means are:	Pluggable A or B, Detachable power cord
The product is intended for use on the following systems:	TN
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:	PS/2 port
Engineering Conditions of Acceptability	

Issue Date: 2003-06-30
Amendment 1 2004-04-27

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Report Reference #

E180881-A19-CB-1

When installed in an end-product, consideration must be given to the following:

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.6	Capacitors in primary circuits		N/A
1.7.1	Certification marks	UL, C-UL	Pass
1.7.4	Supply voltage adjustment	Voltage selector selects between 115 V and 230 V and is a simple control near the inlet. The equipment is auto-ranging. (Only with power supply model PRM401PFC)	Pass
2.6.3.3	Resistance (Ohm) of earthing conductors and their terminations, test current (A)	Test current = 40 A. Voltage Drop=0.37 V, 9.25 mohm.	Pass
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better. Internal wiring is UL Recognized, rated VW-1 or FT-1.	Pass
5.1.6	Measured current (mA)	Max. 0.42mA	-
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: Result see appended table. Fan stalled test: Result see appended table. Connector overload test: Result see appended table.	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⁾	
Power Supply	Delta Electronics Inc.	DPS-300KBxx	I/P: 100-120/200-240Vac, 47/63Hz, 10/5A. O/P: +5V/30A, -5V/0.5A, +12V/13A, -12V/0.8A, 3.3V/26A, +5Vsb/2.0A	UL 60950, IEC 60950	UL, TUV, TUV-Rh CB cert. No. JPTUV-002869	
Power Supply	Delta Electronics Inc.	DPS-300GB-1	I/P: 100-120/200-240Vac, 47/63Hz, 9/4.5A. O/P: +5V/30A, -5V/0.3A, +12V/15A, -12V/0.8A, 3.3V/28A, +5Vsb/2.0A	UL 60950, IEC 60950	UL, TUV, TUV-Rh CB cert. No. JPTUV-002869	
Power Supply	Power Research Technology Co., Ltd. (PRT)	PRM-401PFC	I/P: 100-240Vac, 50/60Hz, 8/5A. O/P: +5V/50A, -5V/1.0A, +12V/27A, -12V/3.0A, 3.3V/30A, +5Vsb/1.0A	UL 60950, IEC 60950	UL, TUV, TUV-PS CB cert. No. DE 2-002938	
Power Supply	FSP Group Inc.	FSP250-60ATV(PF)	I/P: 115/230Vac, 60/50Hz, 10/5A. O/P: +5V/27A, -5V/0.3A, +12V/13A, -12V/0.8A, 3.3V/20A, +5Vsb/2.0A	UL 60950, IEC 60950	UL, TUV, Nemko CB cert. No. NO 15217	
Hard Drive (Optional)	Various	--	+5/+12Vdc, 1.5/1.8A maximum.	UL 60950, EN 60950	UL, TUV, Demko	
Floppy Drive (Optional) (two provided)	Various	--	+5/+12Vdc, 1.5/1.8A maximum.	UL 60950, EN 60950	UL, TUV, Demko	
CD-ROM Drive (Optional)	Various	--	+5/+12Vdc, 1.5/1.8A maximum.	UL 60950, EN 60825-1	UL, TUV, Demko	

IEC 60950					
Clause	Requirement + Test		Result - Remark		Verdict
RTC Battery	Rayovac Corp.	BR2335, BR2032, BF2325	3.0Vdc, 300mAh	UL1416	UL, --
RTC Battery	Mitsubishi Chemical Corp.	CR2032	3.0Vdc, 300mAh	UL1416	UL, --
RTC Battery	Sanyo Energy (U.S.A) Corp.	CR2032	3.0Vdc, 300mAh	UL1416	UL, --
Protective device (Polyswitch) for PS/2 port	Raychem Corp.	SMD-150-2018	5Vdc, 1.1A	--	UL, --
Protective device (Pigtail Fuse) for PS/2 port	Littelfuse Inc.	251	125V, 3A	IEC 60127-3	UL, VDE
Power Switch	Various	--	250 V, minimum 6 A	UL1054, UL61058, IEC60669, IEC61020, IEC61058	UL, VDE
System Fan	Adda Corp.	AD0912HB-A73GL	+12Vdc, 0.25A, 52.5 CFM	UL 60950, EN 60950	UL, TUV
CPU Fan	Nidec Corp.	F06G-12B1S1	+12Vdc, 0.07A	UL 60950, EN 60950	UL, TUV
CPU Fan	Dynaeon Industrial Co., Ltd.	DF1206BH	+12Vdc, 0.30A	UL 60950, EN 60950	UL, TUV
Enclosure	Various	--	Sheet metal, overall 440 mm by 200 mm by 300 mm, minimum 1.1?mm thick	--	--, --
PWB	Various	--	Rated V-1 or better, 105C	UL 796	UL, --
Decorative front bezel	Various	--	Min. HB. Overall 300 mm by 200 mm by 25 mm minimum 3.0 mm thick	UL 94	UL, --
Table below for employing alternate Power Supply and DC Fans on Mar. 2004	--	--	--	--	--, --

IEC 60950					
Clause	Requirement + Test		Result - Remark		Verdict
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, IEC 60950	UL, TUV, Nemko CB cert. No. NO 15238
System Fan	Delta electronics inc	AFB0912H-F00	+12Vdc, 0.3A max., 51.21 CFM	UL 60950, EN 60950	UL, TUV
System Fan	Delta electronics inc	AFB0912HH-F00	+12Vdc, 0.4A max., 57.92 CFM	UL 60950, EN 60950	UL, TUV
System Fan	Delta electronics inc	AFB0912VH-F00	+12Vdc, 0.6A max., 67.8 CFM	UL 60950, EN 60950	UL, TUV
System Fan	Adda Corp.	AD0912HB-A70GL	+12Vdc, 0.275A max., 52.5 CFM	UL 60950, EN 60950	UL, TUV
System Fan	Yate Loon Electronics Co., Ltd.	D90BH-12	+12Vdc, 0.36A max., 50.7 CFM	UL 60950, EN 60950	UL, TUV
System Fan	Nidec Taiwan Corp.	D09T-12PG	+12Vdc, 0.25A max., 1.4 m3/min	UL 60950, EN 60950	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	
In SPS	-	103.5v/50Hz	64.3	769	-	Maximum normal load	
In SPS	-	103.5v/60Hz	63.9	791	-	Maximum normal load	
In SPS	10	115v/50Hz	62.2	807	-	Maximum normal load	
In SPS	10	115v/60Hz	63.9	811	-	Maximum normal load	
In SPS	-	126.5v/50Hz	61.1	827	-	Maximum normal load	
In SPS	-	126.5v/60Hz	63.1	838	-	Maximum normal load	
In SPS	-	207v/50Hz	72.2	484	-	Maximum normal load	
In SPS	-	207v/60Hz	72.8	502	-	Maximum normal load	
In SPS	5	230v/50Hz	76.5	425	-	Maximum normal load	
In SPS	5	230v/60Hz	76.5	451	-	Maximum normal load	
In SPS	-	253v/50Hz	75.3	485	-	Maximum normal load	
In SPS	-	253v/60Hz	76.8	488	-	Maximum normal load	
Power Supply, Delta Electronics Inc., Type DPS-300KBxx.	-	-	-	-	-	-	
-	-	90	132/132	2380/2300	-	Maximum Normal Load, 47/63 Hz	
-	10	100	131/132	2180/2100	-	Maximum Normal Load, 47/63 Hz	
-	10	120	133/133	1890/1820	-	Maximum Normal Load, 47/63 Hz	
-	-	127	133/133	1820/1740	-	Maximum Normal Load, 47/63 Hz	
-	-	180	130/130	1310/1270	-	Maximum Normal Load, 47/63 Hz	
-	5	200	131/131	1200/1160	-	Maximum Normal Load, 47/63 Hz	
-	5	240	131/132	1070/1010	-	Maximum Normal Load, 47/63 Hz	
-	-	254	132/132	1040/980	-	Maximum Normal Load, 47/63 Hz	
-	-	-	-	-	-	Test below for employing alternate Power Supply and DC Fans on Mar. 2004	
F1	-	103v/50Hz	110.3	1127	1127	Maximum normal load	
F1	-	103v/60Hz	110.4	1130	1130	Maximum normal load	
F1	10	115v/50Hz	109.5	1004	1004	Maximum normal load	
F1	10	115v/60Hz	109.6	1012	1012	Maximum normal load	
F1	5	230v/50Hz	106.0	534	534	Maximum normal load	
F1	5	230v/60Hz	106.1	541	541	Maximum normal load	

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

F1	-	253v/50Hz	105.6	501	501	Maximum normal load
F1	-	253v/60Hz	105.6	519	519	Maximum normal load
supplementary information:						
"Maximum normal load" was defined as follows: The unit continuously crossed reading and writing data between HDD, FDD and CD-ROM drive and with monitor adjusted maximum brightness and contrast.						

4.5	TABLE: temperature rise measurements					Pass
	test voltage (V)	:	See below			
	t1 (°XC)	:	--			
	t2 (°XC)	:	--			
temperature rise dT of part/at:			dT (K)		required dT (K)	
Power Supply, Delta Electronics Inc., Type DPS-300KBxx.			90V, 47Hz, 92 min/254V, 47Hz, 102 min		-	
FL2 coil			10.9/12		55	
H.S. body of Q2			12.7/17.1		-	
T1 coil			14.2/15.6		40	
T1 core			10.2/12.3		40	
T901 coil			15.3/18		55	
L101 coil			18.1/20.8		55	
H.D.D. body			9/11.5		--	
CD-ROM body			5.6/8.1		--	
F.D.D. body			3.8/6.3		--	
H.S. body of U12			21.1/25.4		--	
H.S. body of CPU			12.1/10		--	
BT1 body			8.4/14		--	
U3 body			29.7/35.4		--	
U4 body			26.4/30.5		--	
Surface of PC			6.3/8.4		20	
Ambient air			-/-		--	
Power Supply, Power Research, Type PRM-401PFC			90V, 63Hz, 80 mins/132V, 63Hz, 2 hr/180V, 47Hz, 20 mins/264V, 47Hz, 50 mins		-	
U11			14/10/10/10		--	
U21			8/6/8/6		--	
L2 Coil			34/28/25/25		55	
NF1 Coil (on main board)			17/13/12/10		55	
L1 Coil (on top board)			17/13/13/9		55	
T1 Coil			16/15/15/16		40	
T2 Coil			25/23/25/20		40	

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict
NF1 (on inlet board)		15/10/9/8	55
PC Body		3/2/2/2	20
HD Motor		9/8/9/9	--
Ambient		-/-/-	--
Power Supply, Delta, Type DPS-300GB-1		90V 63Hz, 1 hr/132V 63Hz, 35 mins/180V 47Hz, 30 mins/264V 47Hz, 25 mins	-
U11		10/11/10/10	-
U21		9/10/9/9	-
HD Motor		10/11/10/10	-
FL1 Coil		25/23/22/22	55
FL2 Coil		24/21/19/19	55
L5 Coil		18/19/12/17	55
L3 Coil		20/20/19/19	55
T901 Coil		19/20/19/19	55
L301 Coil		21/18/20/21	55
T1 Coil		34/34/33/33	40
PC Body		4/4/3/3	20
Ambient		-/-/-	-
Test below for employing alternate Power Supply and DC Fans on Mar. 2004		103v/253v	-
Ambient		25.1 ϕ X ϕ 25 52	--
Power Supply L1 coil		10.9/9.8	55
Power Supply C6 body		5.5/5.5	35
Power Supply T1 core		11.6/11.8	40
Power Supply T1 coil		12.1/12.1	40
Power Supply T2 core		10.5/10.6	40
Power Supply T2 coil		9.6/9.6	40
Power Supply PWB under HS1		5.3/5.4	55
Power Supply L3 coil		28.7/28.8	55
Mainboard PWB under CPU		24.2/24.4	55
Mainboard PWB under U19		11.2/11.3	55
Mainboard PWB under U2		9.6/9.7	55
Mainboard PWB under U20		12.5/12.7	55
Mainboard C50 body		8.1/8.4	35
Mainboard PWB L16 coil		17.8/18.0	55
Mainboard PWB BT1 body		9.6/9.8	-
HDD body		11.6/11.7	-
CD-ROM body		11.2/11.3	-
FDD body		11.6/11.5	-
Enclosure outside near power supply		4.1/4.2	20

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

temperature rise dT of winding:	R ₁ (Ω)	R ₂ (Ω)	dT (K)	required dT (K)	insulation class
supplementary information:					
<p>The temperatures were measured under worst case normal mode defined in 1.2.2.1 and described in 1.6.2 at voltages as described in 1.4.5</p> <p>Without specified ambient temperature in users manual, therefore the ambient temperature assumed as 50°C, the max. temperature rise is calculated as follows:</p> <p>Winding components:</p> <p>- Transformer, Class A: dT_{max} = 75K - 10K-(50-25)K = 40 K</p> <p>Components with:</p> <p>- max. absolute temp. of 85°C (Electrolytic capacitor): dT_{max} = (8-50)K = 35 K</p> <p>- max. absolute temp. of 105°C (Cap, line choke, PWB): dT_{max} = (10-50)K = 55 K</p> <p>User Accessible Area:</p> <p>- material is metal (45K) dT_{mx} = 45K-(50-25)K = 20K</p>					

5.2	TABLE: electric strength tests and impulse tests		Pass
test voltage applied between:		test voltage (V)	breakdown Yes / No
Primary to SELV		DC 4242	No
Primary to Earth		DC 3000	No
Test below for employing alternate Power Supply and DC Fans on Mar. 2004		-	-
Primary to SELV		DC 4242	No
Primary to Earth		DC 3393	No
supplementary information:			

5.3	TABLE: fault condition tests		Pass
	ambient temperature (°C)	25	
	model/type of power supply	--	
	manufacturer of power supply.....	--	
	rated markings of power supply	--	—

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
Power Supply, Delta Electronics Inc., Type DPS-300KBxx.	-	-	-	-	-	-
Fan	Stalled	240	840 min	-	-	NC, NT, NB. Max. Temperature at L101 coil 118.6°C
Ventilation openings	Blocked	240	234 min	-	-	NC, NT, NB. Max. Temperature at U3 body 73.0°C
-	-	-	-	-	-	Test below for employing alternate Power Supply and DC Fans on Mar. 2004
Ventilation openings	Blocked	230 / 60Hz	4.4 hrs	F1	0.54	NB, NC, NT, CT
System fan	Stalled	230 / 60Hz	4.0 hrs	F1	0.54	NB, NC, NT, CT
Power fan	Stalled	230 / 60Hz	2.3 hrs	F1	0.54	NB, NC, NT, CT
CPU fan	Stalled	230 / 60Hz	1.5 hrs	F1	0.54	NB, NC, NT, unit shutdown
supplementary information:						
NB - No indication of dielectric breakdown; NC - Cheesecloth remained intact; NT - Tissue paper remained intact; CT - Constant temperature was obtained; B - Circuit measures less than 12.5 mA; C - Circuit measures 0 Volts.						

Enclosure

National Differences

(Total 6 Pages including this Cover Page)

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

* No National Differences Declared

** Only Group Differences

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Singapore - Differences to IEC60950, Third Edition (1999)			
2.9.2	<p>(a) After the first paragraph, insert the following: Under tropical conditions, the duration of the humidity conditioning is 5 days (120h) at a temperature: 40 °C with relative humidity 90% to 95%.</p> <p>Conditions described in IEC Publications 60068-2-3: 1969 - "Test Ca: Damp Heat, Steady State" (temperature: 40 °C, relative humidity: 90% to 95 %) apply to insulation to be used under tropical conditions. The additional requirement on humidity conditioning is drawn from Clause 10.2 of IEC 60065: 1998</p>		N/A
2.10.6.5	<p>Delete "(48 h)"</p> <p>Explanation: To be consistent with 2.9.2</p>		N/A
3.2.8	Replace "23°C to 27°C" by "27°C to 30°C"		N/A
General	<p>IT Power Systems are not allowed in the Republic of Singapore and all clauses related to IT Power Systems are not applicable.</p> <p>For a.c. power distribution systems, only TN-S and TT systems are allowed</p>		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

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		Pass
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		Pass
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)		N/A
7	Addition: EMC. The apparatus shall complies with the relevant CISPR requirements	It should be provided in national approval.	N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Japan - Differences to IEC60950, Third Edition (1999)			
1.2.4.101	Addition: Definition of CLASS 0I EQUIPMENT	The unit cannot use in the Class 0I 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	The unit cannot use in the Class 0I application.	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

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
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	The unit cannot use in the Class 0I application.	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

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
Annex A	Add the subclause A.101 titled: "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