

INTERNATIONAL ELECTROTECHNICAL
COMMISSION (IEC)
COMMISSION ELECTROTECHNIQUE
INTERNATIONALE (CEI)

Report No.

DK-6803/A1

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

SYSTEME CEI D'ESSAIS DE CONFORMITE
ET DE CERTIFICATION DES EQUIPEMENTS
ELECTRIQUES (IECEE)
METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product
Produit

LCD PC

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

19 Vdc, 3.79 A, Class III

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

ADVANTECH

Model/type Ref.
Ref. de type

PPC-S154xxx

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

IP20. Where the x can be any alphanumeric character or blank. This CB certificate is an
appendix to CB No. 6803 issued 2003-07-07 due to add with alternative components and
change of type designation

PUBLICATION

EDITION

IEC 60950:1999

3rd

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*

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-A22-CB-1 Amendment 1 2003-12-29

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

Date 2003-12-30

Signature

Karina Christiansen
Certification Manager



An Affiliate of
**Underwriters
Laboratories Inc.**

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

Internal Ref.:
Jakob Petersen

Appendix to CB Certificate No. 6803/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.
Tien-song Area, Qingxing Town, Dongguan, Guangdong, China.
- 4) Advantech Co., Ltd.
No. 600, Han-Pu Road, Yu-Shan, Kun-Shan, Jiang Su, China.
- 5) Beijing Yan Hua Xing Ye Electronic Science & Technology Co., Ltd.
No. 7, 6th Street, Shang Di Zone, Haidian District, Beijing, P.R. China

Herlev, 2003-12-30


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



An Affiliate of
**Underwriters
Laboratories Inc.**

COVER PAGE FOR TEST REPORT

Test Item Description:	LCD PC
Model/Type Reference:	PPC-S154xxx, Where the x can be any alphanumeric character or blank.
Rating(s):	Unit: I/P: 19 Vdc, 3.79 A. Power: I/P: 100-240 V ac, 50/60 Hz, 1.8 A. O/P: 19 V, 3.97 A, Max. 72 W.
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) BEIJING 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 2003-12-29 to include the following changes/additions:

- This test report shall be read in conjunction with the original report, number:
 1. E180881-A22-CB-1, issued June 30, 2003, with CB Certificate (DK-6803), issued July 7, 2003.
- This test report has been amended, due to:
 1. Alternate LCD Panel & DC/AC Inverter Assembly, King Core Electronics Inc., Part No. INV-04T10-0201.
 2. Change model designation from PPC-S154x to PPC-S154xxx.
- Only the following tests were deemed necessary.
 1. Limited Current Circuit Measurement.
 2. Heating 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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TEST REPORT IEC 60950 Safety of information technology equipment	
Report Reference No	E180881-A22-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, DK-2730 Herlev, Denmark
Testing location/procedure	CBTL <input checked="" type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/> WMT <input type="checkbox"/>
Address	Lyskaer 8, DK-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	LCD PC
Trade Mark	ADVANTECH
	
Model/Type reference	PPC-S154xxx, Where the x can be any alphanumeric character or blank.
Manufacturer	SAME AS APPLICANT

Issue Date: 2003-06-30
Amendment 1 2003-12-29

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Report Reference #

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Rating	Unit:
	I/P: 19 Vdc, 3.79 A.
	Power:
	I/P: 100-240 V ac, 50/60 Hz, 1.8 A.
	O/P: 19 V, 3.97 A, Max. 72 W.

Marking Plate - Refer to Enclosure titled Miscellaneous for copy.

Particulars: test item vs. test requirements

Equipment mobility.....: movable
Operating condition.....: continuous
Mains supply tolerance (%).....: No direct connection
Test for IT power systems.....: No
IT testing, phase-phase voltage (V).....: N/A
Class of equipment: Class III (supplied by SELV)
Mass of equipment (kg): 4.75
Protection against ingress of water.....: IP20

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 60384-14.

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 2003-12-29 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:<ol style="list-style-type: none">1. E180881-A22-CB-1, issued June 30, 2003, with CB Certificate (DK -6803), issued July 7, 2003.- This test report has been amended, due to:<ol style="list-style-type: none">1. Alternate LCD Panel & DC/AC Inverter Assembly, King Core Electronics Inc., Part No. INV -04T10-0201.2. Change model designation from PPC-S154x to PPC-S154xxx.- Only the following tests were deemed necessary.<ol style="list-style-type: none">1. Limited Current Circuit Measurement.2. Heating Test.	
Product Description	
<ul style="list-style-type: none">- The unit includes HDD, Floppy, LCDpanel and non-CB approval external power adaptor.	
Model Differences	
N/A	
Additional Information	
N/A	
Engineering Consideration	
The product was submitted and tested for use at the manufacturer's recommended ambient temperature (Tmra) of:	25 °C for external power adaptor, 40 °C for LCD PC
The power supply means are	Detachable power cord (External power adaptor), Pluggable A or B (External power adaptor)
The product is intended for use on the following systems	TN (External power adaptor)
The equipment disconnect device is considered to be	Appliance inlet (External power adaptor)
The following accessible locations (with circuit/schematic designation) are within a limited current circuit	Secondary side of D/A inverter
The following circuit locations (with circuit/schematic designation) were investigated as a limited power source	USB/Keyboard port
Engineering Conditions of Acceptability	
When installed in an end-product, consideration must be given to the following:	

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Report Reference #

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IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

1.7.1	Type/model.....:	PPC-S154xxx, Where the x can be any alphanumeric character or blank.	Pass
	Certification marks.....:	UL, C-UL.	Pass

2.4.2	Limit values	0.7 mA. - Employing the alternate Inverter, King Core Electronics Inc., Part No. INV-04T10-0201. - 34.3 mA peak.	Pass
	Frequency (Hz)	Frequency not exceeding 1 kHz. - Employing the alternate Inverter, King Core Electronics Inc., Part No. INV-04T10-0201. - Maximum 49 kHz.	-
	Measured current (mA).....:	Max. 0.248 mA measured. - Employing the alternate Inverter, King Core Electronics Inc., Part No. INV-04T10-0201. - Maximum 0.56 mA peak was measured in the event of normal condition. - The steady-state current drawn through a non-inductive resistor of 2 K Ohms did not exceed 0.7 mA peak at 0.057 KHz both under normal and single fault conditions.	-
	Measured voltage (V).....:	Max. 496 mV measured. - Employing the alternate Inverter, King Core Electronics Inc., Part No. INV-04T10-0201. - Storage capacitor is rated 150 pF; - Voltage U from T2 pin 6-8 is 1.02 kV pk; - For the open circuit voltage exceeded 450 V peak or dc, but was less than 15 KV peak	-

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict
		or dc, the stored charge was recorded by using the formula $uC = (\mu F) U$.	
	Measured capacitance (μF)	<p>Maximum normal circuit voltage less than 450V peak or dc. Circuit capacitance less than 0.1μF.</p> <p>- Employing the alternate Inverter, King Core Electronics Inc., Part No. INV-04T10-0201.</p> <p>- Max. stored charge is 0.153 μC.</p> <p>- The stored charge of the circuit did not exceed 45 μC and was complied with the other requirements of the LIMITED CURRENT CIRCUITS.</p>	-
2.4.3	Connection of limited current circuits to other circuits	The LIMITED CURRENT CIRCUITS meet the limits of 2.4.2 under normal conditions and under single component/insulation fault in interconnected circuits.	Pass
4.5.1	Temperature rises	The equipment and its component parts did not attain excessive temperatures during normal operation. (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

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
PCB	--	--	V-1 or better, 105°C min.	UL94	--, UL	
Enclosure material	GE Plastics	C2800	V-0	UL 94	--, UL	
Enclosure material	Grand Pacific Petrochemical Corp.	D-1700	V-0	UL 94	--, UL	
LCD Panel	CRT Confidential	CLAA150XA03	TFT type, SVGA 15.0 inch	--	--, --	
LCD Panel	CRT Confidential	CLAA150XG01	TFT type, SVGA 15.0 inch.	--	--, --	
LCD Panel	AU Optronics Corp.	M150XN07	TFT type, XGA 15.0 inch.	--	--, --	
HDD Drive (Optional)	--	--	5Vdc, 0.52A max.	EN 60950	--, TUV, UL, CSA	
FDD Drive (Optional)	--	--	5Vdc, 1A max.	EN 60950	--, TUV, UL, CSA	
CD-ROM Drive (Optional)	--	--	5Vdc, 1.5A max.	EN 60950	--, TUV, UL, CSA	
01 Inverter	Zin-Power Technology, Inc.	HY1004	16V, 600mA, max. O/P volt: 560Vrms max. open Volt: 1200Vrms	--	--, --	
02 Inverter (consisting of items 02-1 thru 4)	King Core Electronics Inc.	INV-04T10-0201	- I/P: 19 V dc, 570 mA; - O/P: Max. 615 V rms, 8.3 mA.	--	--, --	
02-1 Capacitors (C23, C9)	--	--	3 kV, max. 150 pF.	--	--, --	
02-2 Transformers (T1 & T2)	--	--	See Enclosure 4- 01 for Winding Specification & Mechanical Dimension.	--	--, --	
02-3 Bobbin	--	--	LCP, min. V-2.	UL 94 or UL 746C	--, UL	
02-4 Windings	--	--	Min. 105°C.	UL 1446	--, UL	

IEC 60950					
Clause	Requirement + Test		Result - Remark		Verdict
Lithium Battery (Reverse current protection by series circuit of diode and resistor, rated 1kohm)	Rayovac	BR2032	3?V, 195 mAh. Max. Abnormal Charging Current 4 mA	--	--, UL
Lithium Battery (Reverse current protection by series circuit of diode and resistor, rated 1kohm)	Rayovac	BR1632	3?V, 130 mAh. Max. Abnormal Charging Current 4 mA	--	--, UL
System Fan	Sunonwealth	GB0535ACB1-8	5V, 0.16A, 0.9CFM	IEC 60950	--, VDE, UL, CSA
DC Fan for CPU	SonicEdge Industries (SEI)	B5011H05HD	5Vdc, 0.25A, 5.18 CFM	IEC 60950	--, TUV, UL
Following items located for Power Adaptor	--	--	--	--	--, --
Power Adaptor	Lien Electronics Inc.	LE-9702B-06	I/P: 100-240Vac, 60/50Hz, 1.8A; O/P: 19Vdc, 3.79A, 72W	UL 60950	--, UL
- PCB	--	--	V-1 or better, 105°C min.	UL94	--, UL
- Enclosure material	Daicel	SER20	V-0	UL 94	--, UL
- Applicant Inlet	Inalway	0724	2.5A, 250V	VDE 0625-1, IEC 60320	--, VDE, S, UL
- Fuse (F1)	Bel	5HT	3.15A, 250Vac	IEC 60127-2	--, VDE, S, UL
- Fuse (F1)	Cooper	S505	3.15A, 250Vac	IEC 60127-2	--, VDE, S, UL
- Fuse (F1)	Wickmann-Werke	19372	3.15A, 250Vac	IEC 60127-2	--, VDE, S, UL
- Line Filter (LF1)	XEPEX	71-0020C (99-10060023)	Class 105°C	--	--, --
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Aid	MEX	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Arcotronics	1.40, 1.47	max. 0.33µF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA

IEC 60950					
Clause	Requirement + Test		Result - Remark		Verdict
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Eichhoff-Werke	MKT"/"	max. 0.33µF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	EVOX RIFA AB.	PHE 840 M	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Iskra	KNB 1530	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Jenn Fu	MPX	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	LCC	DX	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Matsushita EI	ECQ-EW	max. 0.33µF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Nitsuko	CFKC, CFJC	max. 0.33µF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Okaya	PA, RE series	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Philips	MKP 338 2, PCX2 335	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Pilkor	PCX2 335, PCX2 335M	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Prestige	MPX	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Roederstein	F1772"-2"	max. 0.33µF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA

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Clause	Requirement + Test		Result - Remark		Verdict
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Shiny Space	SX1	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Siemens	B 81130 Series	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	TDK	CS	max. 0.33µF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Teapo	XG-VS	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Thomson	QX	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	UTX	HQX	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1, C25) (C25 max. 0.1µF)(Optional)	Carli	MPX	max. 0.33µF, 275Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- Bridging Capacitors(C2) (Optional)	TDK	CD (Y1 type)	max. 3300pF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- Bridging Capacitors(C2) (Optional)	Roederstien GmbH	WKP (Y1 type)	max. 3300pF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- Bridging Capacitors(C2) (Optional)	Samsung	AD (Y1 type)	max. 3300pF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- Bridging Capacitors(C2) (Optional)	Samwha	SD (Y1 type)	max. 3300pF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- Bridging Capacitors(C2) (Optional)	Murata	KX (Y1 type)	max. 3300pF, 250Vac	IEC 60384-14/1993	--, VDE, S, FI, UL, CSA
- Ripple Capacitor (C3)	--	Electrolytic can type	68-120µF, 400Vdc, min. 105°C	--	--, --

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

- Bleeder Resistors(R1, R2)	--	SMD type	620kohm, 1/4W	--	--, --
- Transformer (T1)	Biing Jey	70-9702E	Class B	UL1446	--, UL
- Triple Insulated Wire in Transformer T1	Furnkawa	TEX-E	Class120°C	IEC 60950	--, TUV, VDE, BSI, UL
- Photo Coupler (IC2)	Sharp	PC 123	di = 0.7 mm	VDE 0884, IEC 60950	--, VDE, S, FI
- Photo Coupler (IC2)	OSRAM (Infineon)	SFH615A-2	di = 0.9 mm	VDE 0884, IEC 60950	--, TUV, S, FI
- Photo Coupler (IC2)	Vishay	CNR 21	di >2.0 mm	VDE 0884, IEC 60950	--, VDE, S, FI
- Photo Coupler (IC2)	Bedford	OPI 110A	di >2.0 mm	VDE 0884, IEC 60950	--, VDE, S, FI
- Line Choke (L2, L4)	Biing Jey	71-2048U	Class 105°C	--	--, --
¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance					

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: temperature rise measurements		Pass
	test voltage (V)	See below	—
	t1 (°C)	--	—
	t2 (°C)	See below	—
temperature rise dT of part/at:		dT (K)	required dT (K)
Location 1 and Location 2 for Power Supply Location 3 to Location 11 for System		A. Max. normal load 90V/60Hz, 4hrs	--
1. T1 Coil		57	85
2. Enclosure (out side)		21	55
3. PCB near CPU		33	65
4. T1 Coil (inverter)		39	50
5. L1 Coil (inverter)		53	65
6. Hard Disk Body		17	--
7. Floppy Disk Body		20	--
8. CD-ROM Body		19	--
9. Enclosure (inside)		17	--
10. Enclosure (outside)		6	55
11. Panel Body		15	--
12. Ambient		25°C	--
Location 1 and Location 2 for Power Supply Location 3 to Location 11 for System		B. Max. normal load (Block Opening) 240V, 60Hz, 1.5hrs / C. Max. normal load (Lock CPU Fan) 240V, 60Hz, 2hrs	--
1. T1 Coil (Class E)		49/46	--
2. Enclosure (out side)		22/19	--
3. PCB near CPU		35/61	--
4. T1 Coil (inverter)		33/50	--
5. L1 Coil (inverter)		47/63	--
6. Hard Disk Body		22/10	--
7. Floppy Disk Body		19/17	--
8. CD-ROM Body		21/16	--
9. Enclosure (inside)		17/16	--
10. Enclosure (outside)		8/20	--
11. Panel Body		15/18	--
12. Ambient		26°C/27°C	--
Power adaptor investigation		Max. normal load 99V, 60Hz, 4 hrs / Max. normal load 253V, 50Hz, 2.5 hrs	--
1. LF1 Coil		67/53	80
2. L2 Coil		57/48	80
3. C3 Body		70/57	80

IEC 60950							
Clause	Requirement + Test			Result - Remark		Verdict	
4. PCB under Q1				60/57		80	
5. PCB under D4B				60/54		80	
6. T1 Coil				75/69		85	
7. T1 Core				64/58		85	
8. Top Enclosure (inside)				53/47		70	
9. Bottom Enclosure (inside)				50/45		70	
10. Top Enclosure (outside)				32/29		70	
11. Output wire				33/29		--	
12. Ambient				24°C/25°C		--	
- Employing the alternate Inverter, King Core Electronics Inc., Part No. INV-04T10-0201. - Max. Normal Load of 90 V ac, 60 Hz, 1.5 hrs, ambient/Tmra = 25/40				--		--	
Inverter T2 Coil				33		55	
temperature rise dT of winding:		R ₁ (Ω)	R ₂ (Ω)		dT (K)	required dT (K)	insulation class
supplementary information:							

Enclosure

National Differences

(Total 5 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

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		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)		N/A
7	Addition: EMC. The apparatus shall complies with the relevant CISPR requirements		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		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

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		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	Class I equipment.	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"		Pass
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

Issue Date: 2003-06-30
Amendment 1 2003-12-29

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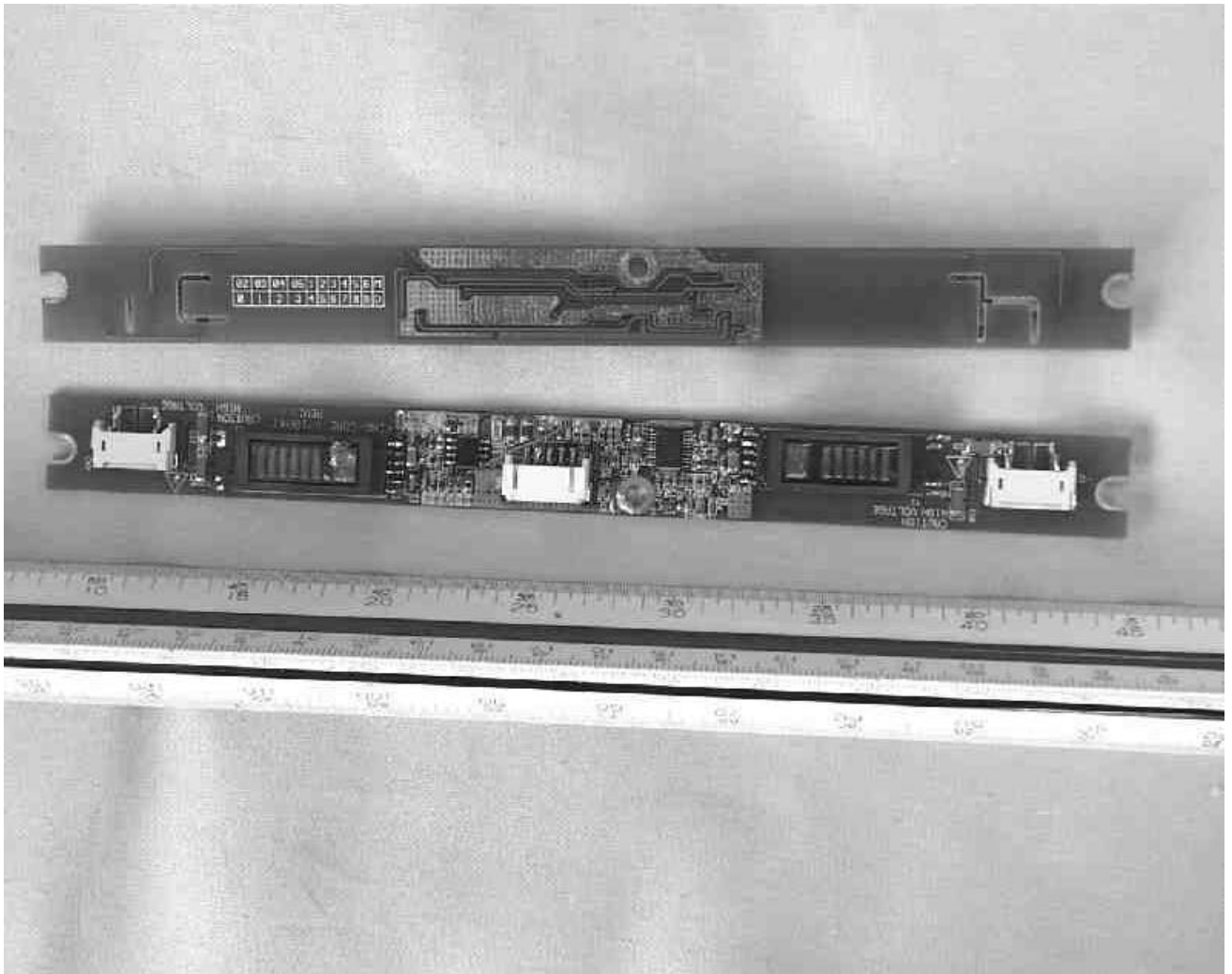
Report Reference #

E180881-A22-CB-1

Enclosure
Photographs

(Total 2 Pages including this Cover Page)

Supplement Id	Description
3-1 1	Overall view of the Inverter



Issue Date: 2003-06-30
Amendment 1 2003-12-29

Page 1

Report Reference # E180881-A22-CB-1

Enclosure

Diagrams

(Total 3 Pages including this Cover Page)

Supplement Id	Description
4-01	Schematic & Physical Dimension of DC/AC Inverter Transformers (T1 & T2)

Title		Transformer Specification			Date		2003/8/4	
Model		HY1004T		Revision	1.0	Part No.	INV-04T10-0201	

Electric & Mechanical SPECIFICATION





COIL	TERMINAL NO.	WINDING SPECIFICATION	INDUCTANCE @1KHz/1V	LEAKAGE INDUCTANCE @50KHz/1V	D.C.RESISTANCES	REMARK
P1	4→2	0.18 mm 45T±0T	/	/	694 m ohm MAX	
S1	5→6	0.03 mm 2000T±0T	1.38 H ± 25%	245 mH ± 10%	877 ohm ±15%	

OPERATION CONDITION ABROLUTLY MIN/MAX

OPERATING TEMPERATURE : -20°C ~ +85°C
 STORAGE TEMPERATURE : -30°C ~ +130°C
 OPERATING FREQUENCY : 30KHz ~ 80KHz
 HUMIDITY: 0~90% RH
 CONTINUOUS RUNING VOLTAGE WITH 1600 V rms / 2260 V 0~Vp
 FINISHED PRODUCTS WEIGHT: ≤ 2.5 g ± 0.2 g
 PIN COPLANAR TOLERANCE: 0.15 mm (MAX)
 HI POT:1800V rms @ 5 mA 1 SEC,COILS TO CORE.
 500V rms @ 5 mA 1 SEC PRIMARY TO SECONDARY

ELECTRICAL TEST SPECIFICATION AND SAMPLE TEST REPORT / TEST CONDITION:25°C @50%RH

TEST EQULPMENT				L.C.R.=DU6022 D.C.R.=ABMS245 DATA:03080405			
TEST ITEM	DCR			COIL INDUCTANCE			
PINS	4→2	5→6		5→6	5→6		
SPEC	694	877		1.38	245		
UNIT	mΩ	Ω		H	mH		
CONDITION	AT 25°C			1KHz/1V	50KHz/1V		
TOLERANCE	MAX	±15%		±25%	±10%		
1	578	882		1.45	245		
2	580	878		1.47	245		
3	575	875		1.47	245		
4	575	876		1.42	245		
5	574	877		1.25	237		
6	588	877		1.26	239		
7	579	875		1.34	247		
8	578	882		1.45	245		
9	580	878		1.47	245		
10	575	875		1.47	245		

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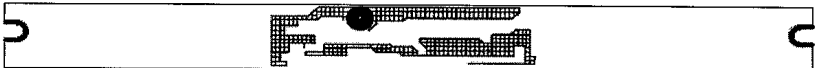


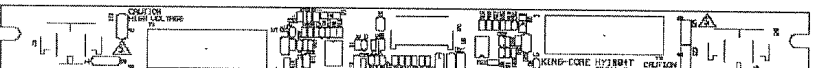



Report Reference #

E180881-A22-CB-1

Enclosure
Schematics + PWB

(Total 2 Pages including this Cover Page)

Supplement Id	Description
5-06	Inverter layout

Title	Gerber Photo		Date
Model	HY1004T	Revision 1.0	2003/8/4
Part No. INV-04T10-0201			
CAM350 Shareware V 7.0 : Mon Aug 04 10:03:46 2003 - (Untitled)			
			
			
			
			
			
			
			
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	Approved 	Checked 	Prepared 