Test Report issued under the responsibility of:

TEST REPORT

IEC 60950-1

Information technology equipment – Safety – Part 1: General requirements

Report Number. ..... :	**T223-0258/19**
Date of issue ..... :	**2019-06-19**
Total number of pages ..... :	**256 pages**
Applicant's name ..... :	**GlobTek, Inc.**
Address ..... :	**186 Veterans Drive Northvale, NJ 07647, USA**
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition) + A1:2009 + A2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form(s) Originator .... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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 an NCB in accordance with IECEE 02.

General disclaimer:

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	ITE Power Supply
Trade Mark ..... :	GlobTek, Inc.
Manufacturer ..... :	GlobTek, Inc. 186 Veterans Drive Northvale, NJ 07647, USA
Model/Type reference ..... :	GTA41077PWWWVV-X.X WWW is output power in Watts, offset by 1 decimal place to the right. Max. Watt 120; VV is output voltage for base model; -X.X is optional for specifying the output voltage deviation in 0.1 increments and X.X is to be subtracted from the base rated voltage or can be blank.
Ratings ..... :	Input: 100-240 Vac; 1,8 A; 50-60 Hz Output: 12 - 48 Vdc; max. 8,33 A

Testing procedure and testing location:			
☒	**CB Testing Laboratory:**	SIQ Ljubljana SIQ Ljubljana is accredited by Slovenian Accreditation with accreditation number LP-009 in the field of testing	
Testing location/ address.....:		Tržaška c. 2, SI-1000 Ljubljana Slovenia	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address.....:			
Tested by (name + signature) .....:		Rok Štampohar	
Approved by (name + signature) .....:		Boštjan Glavič	
☐	**Testing procedure: TMP/CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Approved by (name + signature) .....:			
☐	**Testing procedure: WMT/CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name + signature).....:			
Approved by (name + signature) .....:			
☐	**Testing procedure: SMT/CTF Stage 3 or 4:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			

Witnessed by (name + signature) ..... :		
Approved by (name + signature)..... :		
Supervised by (name + signature)..... :		

List of Attachments:

1. Test Report (82 pages)
2. National Differences – Enclosure No. 1 (46 pages)
3. European Group Differences and National Differences according to EN 60950-1:2006 + A1:2010 + A2:2013 + A11:2009 + A12:2011 – Enclosure No. 1a (21 pages)
4. Pictures – Enclosure No. 2 (8 pages)
5. Schematics, PCB Layouts - Enclosure No. 3 (5 pages)
6. Transformer Data Sheets – Enclosure No. 4 (30 pages)
7. Additional test data – Enclosure No. 5 (64 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
1.6.2 Input Test **1.7.11 Durability** **2.1.1.5 Energy Hazard Measurements** **2.1.1.7 Capacitance Discharge Test** **2.2.2 SELV: Hazard Voltage (Circuit) Measurement Test** **2.2.3 SELV Reliability testing** **2.4 Limited Current Circuit (Bridging components)** **2.6 Earthing Test, earth trace test (UL PAG)** **2.9.2 Humidity Test** **2.10.2 Working Voltage measurement on PCB and Transformer** **2.10.3/2.10.4 Clearance and Creepage distance measurement** **2.10.5 Distance Through Insulation measurement** **2.10.5.6 Thin Sheet Material (barriers)** **4.2.2-4.2.4 Steady force test, 10 N, 30 N, 250 N** **4.2.5 Impact test, Fall test, Swing test** **4.2.6 Drop test** **4.2.7 Stress relief test; heat test (°C/7 h)** **4.5.2 Heating (Temperature) Test** **4.5.5 Resistance to abnormal heat (Ball pressure test)** **5.1 Touch Current and protective conductor current** **5.2 Electric Strength Test** **5.3 Abnormal Operating Tests foreseeable misuse:**	**SIQ Ljubljana** **Mašera-Spasićeva ulica 10,** **SI-1000 Ljubljana, Slovenia**

SELV reliability and failure in the voltage regulation, Functional insulation, Component faults, Overload and short at the outputs	

Summary of compliance with National Differences

List of countries addressed:

Argentina**, Australia, Austria***, Bahrain**, Belarus**, Belgium***, Brazil**, Bulgaria***, Canada, China, Cyprus***, Colombia**, Croatia**, Czech Republic***, Denmark***, Finland***, France***, Germany***, Greece***, Hungary***, India**, Indonesia**, Iran**, Ireland***, Israel, Italy***, Japan*, Kazakhstan**, Kenya**, Korea, Libya**, Malaysia**, Mexico**, Netherlands***, New Zealand*, Norway***, Pakistan**, Poland***, Portugal***, Romania***, Russian Federation**, Saudi Arabia**, Serbia**, Singapore**, Slovakia***, Slovenia***, South Africa**, Spain***, Sweden, Switzerland, Thailand**, Turkey***, Ukraine**, United Arab Emirates**, United Kingdom, Uruguay**, USA, Vietnam**

* No national differences to IEC 60950-1:2005 (2nd edition) (+ A1 + A2) declared

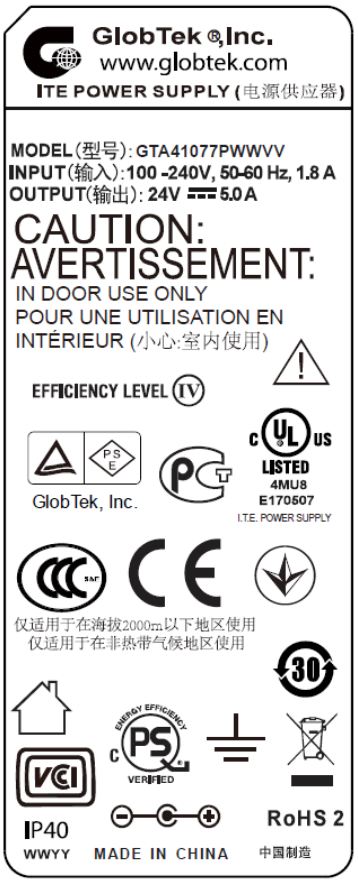
** No national differences to IEC 60950-1:2005 (2nd edition) + A1 + A2 or IEC 60950-1:2001 (1st edition) declared

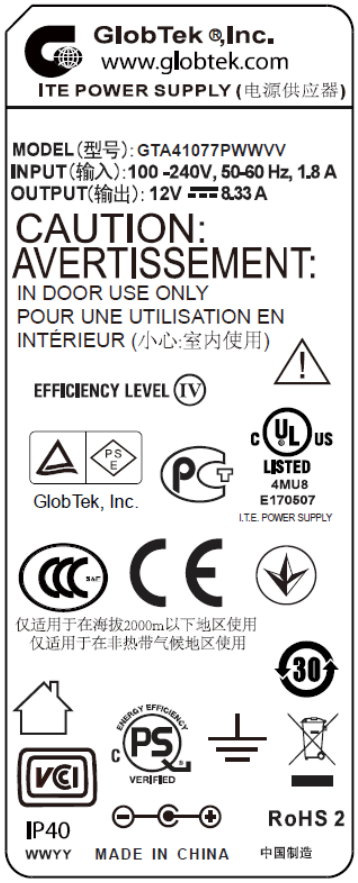
*** EU group differences

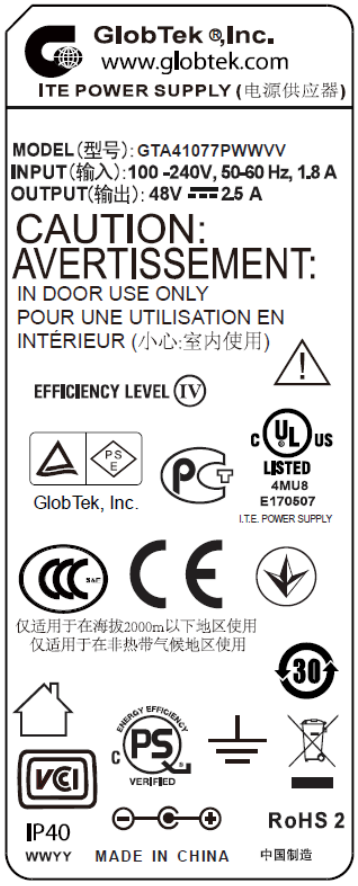
☒ **The product fulfils the requirements of EN 60950-1:2006 + A1:2010 + A2:2013 + A11:2009 + A12:2011 (see Enclosure No. 1a).**

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.







Test item particulars ..... :	
Equipment mobility ..... :	[x] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains ..... :	[x] pluggable equipment [x] type A [] type B [] permanent connection [x] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition ..... :	[x] continuous [] rated operating / resting time:
Access location ..... :	[x] operator accessible [] restricted access location
Over voltage category (OVC) ..... :	[] OVC I [x] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values ..... :	+ / -10%
Tested for IT power systems ..... :	[x] Yes [] No
IT testing, phase-phase voltage (V) ..... :	230 (only for Norway)
Class of equipment ..... :	[x] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) ..... :	16 A (13 A for UK, 40 A for US/CAN)
Pollution degree (PD) ..... :	[] PD 1 [x] PD 2 [] PD 3
IP protection class ..... :	None
Altitude during operation (m) ..... :	2000
Altitude of test laboratory (m) ..... :	300
Mass of equipment (kg) ..... :	0,690

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)
Testing.....:	
Date of receipt of test item.....:	2008-05-23
Date(s) of performance of tests.....:	From 2008-05-29 to 2009-01-14 From 2012-01-12 to 2012-01-31 (Rev. No. 1.0)

General remarks:

"(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 ☒ comma / ☐ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....: ☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... : GlobTek, Inc., 186 Veterans DR, Northvale, NJ 07647, USA

GlobTek (Suzhou) Co. Ltd., Building 4, # 76, Jin Ling East Rd., Suzhou Park, Suzhou, Jiangsu 215021, P.R.China

General product information: ITE Power Supply

Information about the Product:
Class I, desktop switching power adaptor, provided with appliance inlet for connection to the main and intended for TN power system.
The power supply's top enclosure is secured to bottom enclosure by screws and mechanical clips.
The test items are pre-production samples without serial numbers.

All models are identical except for output ratings, secondary winding of transformer T1 and model/type designation. Model GTA41077P12048 has different PCB layout on secondary side than other models.

Nomenclature

GTA41077PWWWVV-X.X
WWW is output power in Watts, offset by 1 decimal place to the right. Max. Watt 120;
VV is output voltage for base model;
-X.X is optional for specifying the output voltage deviation in 0.1 increments and X.X is to be subtracted from the base rated voltage or can be blank.

Model list:

Model	Output Voltage	Output Current	Max. Watt
GTA41077PWWW12	12 Vdc	0 – 8.33 A	99.96 W
GTA41077PWWW15-X.X	12.1 – 15 Vdc	0 – 8.28 A	99.96 W
GTA41077PWWW19-X.X	15.1 – 19 Vdc	0 – 7.95 A	120 W
GTA41077PWWW24-X.X	19.1 – 24 Vdc	0 – 6.28 A	120 W
GTA41077PWWW36-X.X	24.1 – 36 Vdc	0 – 4.98 A	120 W
GTA41077PWWW48-X.X	36.1 – 48 Vdc	0 – 3.32 A	120 W

Additional information

These units were evaluated to comply with both IEC 60950-1:2005 (Second Edition), Am 1: 2009/ EN 60950-1:2006 + Am 1:2010 + Am 11:2009 + Am 12:2011and IEC 60065/EN60065:2001 + A1: 2006.
Where test procedures or acceptable limits were more stringent in one standard, data taken was considered acceptable for both standards' requirements.

Explanation of the test program:

The component was tested according to the standard IEC 60950-1:2005 (2nd Edition) + A1:2009 + A2:2013 and/or EN 60950-1:2006 + A1:2010 + A2:2013 + A11:2009 + A12:2011.

Additionally, the component was also evaluated according to the standards CSA C22.2 No. 60950-1:2007 + A1:2011 + A2:2014 and UL60950-1:2007 (2nd Edition) + A1:2011 + A2:2014 and fulfils the requirements of these standards.

1. The products were tested to be suitable for connection to 16 A branch circuit in series. The unit is approved for TN mains star connections.

2. The secondary output circuit for all models is separated from mains by reinforced insulation and rated SELV non-hazardous energy levels and limited current circuit,

3. The appliance inlet is used as disconnect device.

4. The transformer provides reinforced insulation of insulation class F (see also list of safety critical components).

5. The equipment has been evaluated for use in a Pollution Degree 2 and overvoltage category II environment and a maximum altitude of 2000 m.

6. A suitable Electrical and Fire enclosure is provided.

7. The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C

8. The tests are based on +10% and -10% tolerance and considered in compliance with +6% and -10% tolerance.

History Sheet:

Date	Report No.	Change/Modification	Rev. No.
2009-01-14	T223-0264/08	Initial report issued.	--
2012-01-31	T223-0014/12	The original Test Report Ref. No. T223-0264/08, was modified on 2012-01-31 to include the following changes and/or additions: Test report upgrade to new edition of the standard IEC 60950-1:2005 (Second Edition), Am 1: 2009 / EN 60950-1:2006 + Am 1:2010 + Am 11:2009 + Am 12:2011 No additional tests necessary.	1.0
2019-06-19	T223-0258/19	Revision of the report: - test report updated to latest standard edition including amendment A2 - Test item description changed from Desk top Power Supply to ITE Power Supply - Input current change from 8,33 – 2,5 A to max. 8,33 A - Manufacturer for choke LF1, LF2, L1 and L2 changed from Axis to GlobTek. There are no physical changes on windings - Manufacturer GlobTek added for Transformer T1. There are no physical	2.0

		changes on windings - Manufacturer for plastic enclosure changed from GE Plastics China Ltd. to Sabic - Description of model names were changed (tests performed in report T223-0014/12 covered all models). - test item description was changed from Desk top Power Supply to ITE Power Supply - Latest AUSTRALIA/NEW ZEALAND National differences used. - Reworked label used (non-safety relevant) No other additional tests performed.	

Information for Production testing to be done by the manufacturer:

Factory Tests:

The equipment at the conclusion of manufacture, before shipment, is subject to the following production line testing:

(Warning: The factory test(s) specified may present a hazard of injury to personnel and/or property and should only be performed by persons knowledgeable of such hazards and under conditions designed to minimize the possibility of injury.)

Production-line Dielectric Voltage-Withstand Test (Cl 5.2): The equipment at the conclusion of manufacture, before shipment, shall withstand for one sec, without breakdown, the application of 1500Vac or 2121Vdc between live parts and exposed non-current-carrying metal parts.

- Production-Line Earthing-Continuity Test Ref (Cl 2.6.3.4): Each unit that has a protective earthing connection / conductor shall be tested, as a routine production-line test, to determine that earthing continuity is provided between the protective earthing connection / conductor and the accessible dead metal parts of the unit that are likely to become energized. Any indicating device (an ohmmeter, a battery and buzzer combination or the like) can be used to determine compliance. Only a single test need be made if the accessible metal selected is conductively connected to all other accessible metal.

Additional information for the follow up engineer:
/

Abbreviations used in the report:

- normal conditions	**N.C**.	- single fault conditions	**S.F.C**
- functional insulation	**OP**	- basic insulation	**BI**
- double insulation	**DI**	- supplementary insulation	**SI**
- between parts of opposite polarity	**BOP**	- reinforced insulation	**RI**

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		P
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	(see list of safety critical components table 1.5.1 and the transformer drawings in the Enclosure No. 3)	P
1.5.5	Interconnecting cables	Output cable see 3.1	P
1.5.6	Capacitors bridging insulation	Primary-to-earth capacitors are subclass Y1 or Y2. Line-to-line capacitors are subclass X1 or X2.	P
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such resistors are bridging double/reinforced insulation.	N/A
1.5.8	Components in equipment for IT power systems	Certified capacitors connected between line and earth, ref. List of Critical Components.	P
1.5.9	Surge suppressors		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.1	General	Surge suppressors comply with Annex Q.	P
1.5.9.2	Protection of VDRs	Fuse F1 in series with NZR	P
1.5.9.3	Bridging of functional insulation by a VDR	Surge suppressors connected Line to Neutral comply with Annex Q.	P
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No VDR bridging double or reinforced insulation.	N/A
1.6	**Power interface**		P
1.6.1	AC power distribution systems	TN, and IT for 230 Vac.	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation throughout the equipment.	P
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	The required marking is readily visible in Operator access area.	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	100–240 Vac	P
	Symbol for nature of supply, for d.c. only..... :	AC input voltage only	N/A
	Rated frequency or rated frequency range (Hz) ... :	50-60Hz	P
	Rated current (mA or A) ..... :	1,8A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark ..... :	GlobTek	P
	Model identification or type reference ..... :	GTA41077 Series	P
	Symbol for Class II equipment only ..... :		N/A
	Other markings and symbols ..... :	For indoor use.	P
1.7.1.3	Use of graphical symbols		P
1.7.2	Safety instructions and marking	Safety instructions in English. Other languages will be provided when submitted for national approval.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	General	No precautions are necessary.	P
1.7.2.2	Disconnect devices	The appliance inlet is considered as disconnect device.	P
1.7.2.3	Overcurrent protective device	Unit is pluggable equipment type A	N/A
1.7.2.4	IT power distribution systems	The following information should be given in the installation instruction: "This product is also designed for IT power distribution system with phase-to-phase voltage 230V".	P
1.7.2.5	Operator access with a tool	The operator is not instructed to use a tool to gain access to Operator access areas.	N/A
1.7.2.6	Ozone	Unit does not produce ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment .....:	No voltage selector (Power supply has a wide range input circuit).	N/A
	Methods and means of adjustment; reference to installation instructions .....:		N/A
1.7.5	Power outlets on the equipment .....:	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:	Fuse locations and markings: F1 T4A/250Vac	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals .....:	Appliance inlet, marking of the protective earthing terminal is not applicable.	P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment is not permanently connected or provided with a non-detachable power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	not intended for connection to DC mains.	N/A
1.7.8	Controls and indicators	There are no controls affecting safety.	N/A
1.7.8.1	Identification, location and marking .....:		N/A
1.7.8.2	Colours .....:	No indicators with colors.	N/A
1.7.8.3	Symbols according to IEC 60417 .....:	There are no switches in the equipment.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.4	Markings using figures ..... :	No controls in the sense of this clause.	N/A
1.7.9	Isolation of multiple power sources ..... :	Only one connection supplying hazardous voltages and energy levels to the equipment.	N/A
1.7.10	Thermostats and other regulating devices ..... :	No thermostats or other regulating devices.	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No removable parts.	P
1.7.13	Replaceable batteries ..... :	No lithium battery in the equipment.	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations ..... :	Equipment not intended for installation in RAL.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2	**PROTECTION FROM HAZARDS**		P
2.1	**Protection from electric shock and energy hazards**		P
2.1.1	Protection in operator access areas	There is adequate protection against operator contact with bare parts at ELV or hazardous voltage or parts separated from these with basic or functional insulation only (except protective earth), also after operator detachable parts are removed and doors and covers are opened.	P
2.1.1.1	Access to energized parts		P
	Test by inspection .....:	Verified.	P
	Test with test finger (Figure 2A) .....:	Verified.	P
	Test with test pin (Figure 2B) .....:	Verified.	P
	Test with test probe (Figure 2C) .....:	No TNV circuit.	N/A
2.1.1.2	Battery compartments	No battery compartment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	Verified.	N/A
2.1.1.5	Energy hazards .....:	(see appended table 2.1.1.5)	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment	The capacitance of the input circuit is > 0,1µF. The measurements were performed in worst-case condition.	P
	Measured voltage (V); time-constant (s).....:	See appended table 2.1.1.7.	—
2.1.1.8	Energy hazards – d.c. mains supply	Unit not connected to DC mains.	N/A
	a) Capacitor connected to the d.c. mains supply ..:		N/A
	b) Internal battery connected to the d.c. mains supply .....:		N/A
2.1.1.9	Audio amplifiers .....:	No audio amplifier within the unit.	N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.2	**SELV circuits**		P
2.2.1	General requirements	SELV limits (at accessible parts) are not exceeded under normal condition and after a single fault.	P
2.2.2	Voltages under normal conditions (V) ..... :	Within SELV limits. (See appended table 2.2)	P
2.2.3	Voltages under fault conditions (V) ..... :	Single fault conditions: < 60 Vdc. See enclosed test results.	P
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits are only connected to other secondary circuits. SELV circuit and all interconnected circuits separated from primary by double insulation. The SELV circuit does not exceed the SELV limits under normal and fault conditions.	P
2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuits in the equipment.	N/A
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		P
2.4.1	General requirements		P
2.4.2	Limit values	0.7 mA pk	P
	Frequency (Hz) .....:	<1 kHz	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured current (mA) ..... :	0,56 mA pk	—
	Measured voltage (V) ..... :	320 V pk	—
	Measured circuit capacitance (nF or µF) ..... :	CY1 = CY3 =4700 pF	—
2.4.3	Connection of limited current circuits to other circuits	The LIMITED CURRENT CIRCUIT connected to other circuits complies with the requirements of Sub-clause 2.4.1.	P
2.5	**Limited power sources**		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) ..... :		—
	Current rating of overcurrent protective device (A) .:		—
2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	Accessible conductive parts are reliably connected to protective earth.	P
2.6.2	Functional earthing	Functional Earthing connected to protective bonding.	P
	Use of symbol for functional earthing .....:		N/A
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Size of protective bonding conductors		P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	Minimum 18 AWG size	—
	Protective current rating (A), cross-sectional area (mm^2), AWG..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) ..... :	Refer to Table 2.6	P
2.6.3.5	Colour of insulation ..... :	Protective bonding conductors are green with yellow stripe.	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals		P
	Rated current (A), type, nominal thread diameter (mm) ..... :	The equipment is provided with an appliance inlet	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	The equipment is provided with an appliance inlet.	P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment	No interconnection of equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	There are no switches or over current protective devices in the protective earthing / bonding conductors.	N/A
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect protective earth without disconnecting mains.	P
2.6.5.4	Parts that can be removed by an operator	No operator removable parts except supply cord.	P
2.6.5.5	Parts removed during servicing	Protective earthed parts cannot be removed in a way, which impair safety.	P
2.6.5.6	Corrosion resistance	No risk of corrosion.	P
2.6.5.7	Screws for protective bonding	No screws used for protective bonding	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	No TNV	N/A

2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements	Protective devices are integrated in the equipment.	P
	Instructions when protection relies on building installation	Pluggable Type A	N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection	The building installation is considered as providing short-circuit backup protection.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.7.4	Number and location of protective devices .....:	One protective device in the "LIVE" phase.	P
2.7.5	Protection by several devices	Only one protective device. See Sub-clause 2.7.4.	N/A
2.7.6	Warning to service personnel .....:	Not permanently connected equipment or equipment provided with non-reversible plug.	N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No safety interlock.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		P
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. No driving belts or couplings used.	P
2.9.2	Humidity conditioning		P
	Relative humidity (%), temperature (°C) .....:	Humidity treatment performed for 48h at 91-95%.	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, supplementary, reinforced or double.	P
2.9.4	Separation from hazardous voltages	Reimforced insulation	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Method(s) used ..... :	Accessible conductive parts, SELV circuits or TNV circuits are separated from parts at hazardous voltage by double or reinforced insulation (Method 1).	—
2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General		P
2.10.1.1	Frequency .....:	50-60 Hz	P
2.10.1.2	Pollution degrees .....:	Pollution degree 2	P
2.10.1.3	Reduced values for functional insulation	Functional insulation Line to Neutral before fuse complies with 2.10.3 & 2.10.4. Other functional insulations comply with 5.3.4 c).	P
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions	No such transformer used.	N/A
2.10.1.6	Special separation requirements	No TNV circuits.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit.	N/A
2.10.2	Determination of working voltage	The measured working voltage or the input voltage was applied, whatever value was higher (see table 2.10.2)	P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	Considered.	P
2.10.2.3	Peak working voltage	Considered.	P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply .....:	Overvoltage Category II (2500Vpeak)	P
	b) Earthed d.c. mains supplies .....:	Unit not intended for connection to DC mains.	N/A
	c) Unearthed d.c. mains supplies .....:	Unit not intended for connection to DC mains.	N/A
	d) Battery operation .....:	No battery.	N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.6	Transients from a.c. mains supply .....:	Secondary circuit is earthed. One step lower transients from a.c. mains supply circuit considered.	P
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:	Unit not intended for connection to telecommunication network or cable distribution system.	N/A
2.10.3.9	Measurement of transient voltage levels	Measurement not relevant.	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply .....:		N/A
	For a d.c. mains supply .....:		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests.....:	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No such potted insulation	N/A
2.10.5.4	Semiconductor devices	Approved optical insulators are used. See list of critical components.	P
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material	One layer used which comply with the required electric strength test.	P
	Number of layers (pcs).....:		—
2.10.5.8	Non-separable thin sheet material	No such insulation.	N/A
2.10.5.9	Thin sheet material – standard test procedure		P
	Electric strength test	(see appended table 2.10.5)	—

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	Transformers provided with triple insulated wire complying with 2.10.5.12.	P
2.10.5.12	Wire in wound components	Approved triple insulated wire is used inside transformers. See list of critical components.	P
	Working voltage .....:	301,8Vrms / 452Vpk	P
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplementary, reinforced insulation .....:	reinforced	P
	c) Compliance with Annex U .....:	Approved triple insulated wire is used.	P
	Two wires in contact inside wound component; angle between 45° and 90° .....:	Physical separation in the form of insulating sleeving provided to relieve mechanical stress at the crossover point.	P
2.10.5.13	Wire with solvent-based enamel in wound components	No TNV circuits.	N/A
	Electric strength test	(see appended table 2.10.5)	—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	1 layer PCB, no inner layer.	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	Primary and secondary layers do not overlap.	N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs) .....:		N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test	(see appended table 5.2)	N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	**General**		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wire ways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors	(see appended table 5.2)	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	Electrical screw connection is only connecting protective earth to chassis. Metal screw engages more than 2 threads. Screws made of insulating material are not used where electrical connections, including protective earthing, are involved.	N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	N/A
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N/A
3.1.9	Termination of conductors	Terminations cannot become displaced so that clearances and Creepage distances can be reduced.	P
	10 N pull test	Force 10N applied to the termination points of the conductors	P
3.1.10	Sleeving on wiring	Sleeves are not used as supplementary insulation.	N/A
3.2	**Connection to a mains supply**		P

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.1	Means of connection		P
3.2.1.1	Connection to an a.c. mains supply	Provided with an appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply	AC source	N/A
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320 and is properly placed to avoid hazards after insertion of the appliance coupler.	P
3.2.5	Power supply cords	No power supply cords	N/A
3.2.5.1	AC power supply cords	Power supply cord is not provided with the equipment, refer to Summary of Testing.	N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
3.2.5.2	DC power supply cords	Power supply cord is not provided with the equipment, refer to Summary of Testing.	N/A
3.2.6	Cord anchorages and strain relief	Equipment provided with an appliance inlet.	N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage	No sharp points or cutting edges on the equipment surfaces.	P
3.2.8	Cord guards	The equipment is neither hand-held nor intended to be moved during operation.	N/A
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm).....:		—
3.2.9	Supply wiring space	Equipment provided with an appliance inlet.	N/A

3.3	**Wiring terminals for connection of external conductors**	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.1	Wiring terminals	Equipment provided with appliance inlet.	N/A
3.3.2	Connection of non-detachable power supply cords	Not equipment with special non-detachable power supply cord.	N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) ..... :		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement	Appliance coupler is used as disconnect device.	P
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No parts remain energized.	N/A
3.4.5	Switches in flexible cords	No isolating switch in the flexible cord.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	N/A
3.4.8	Switches as disconnect devices	No switch as disconnect device.	N/A
3.4.9	Plugs as disconnect devices	The appliance coupler is regarded as disconnect device, no warning is required.	N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages or hazardous energy levels.	N/A
3.4.11	Multiple power sources	One power source only.	N/A
3.5	**Interconnection of equipment**		P

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Clause	Requirement + Test	Result - Remark	Verdict
3.5.1	General requirements	Output is intended for connection to SELV circuit.	P
3.5.2	Types of interconnection circuits .....:	SELV	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment	1) USB outputs and PS2 connectors are protected by polyswitch and meets limited power source requirements. 2).	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4	**PHYSICAL REQUIREMENTS**		P
4.1	**Stability**		P
	Angle of 10°	Unit does not overbalance at 10°.	P
	Test force (N) ..... :	The unit is not floor standing.	N/A
4.2	**Mechanical strength**		P
4.2.1	General		P
	Rack-mounted equipment.	(see Annex DD)	N/A
4.2.2	Steady force test, 10 N	No hazard. See appended table 4.2.2.	P
4.2.3	Steady force test, 30 N	No internal enclosure.	N/A
4.2.4	Steady force test, 250 N	No hazard. The test was performed with 250N.	P
4.2.5	Impact test		P
	Fall test		P
	Swing test		P
4.2.6	Drop test; height (mm) ..... :	No damage after 1m drop.	P
4.2.7	Stress relief test	Test is carried out at 97°C 7h (max. dT=47ºC+10ºC+40ºC) No risk of shrinkage or distortion on enclosures due to release of internal stresses.	P
4.2.8	Cathode ray tubes	No cathode ray tubes.	N/A
	Picture tube separately certified ..... :	(see separate test report or attached certificate)	N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Unit is not intended to be mounted on a wall or ceiling.	N/A
4.3	**Design and construction**		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N) ..... :	No knobs, grips, handles, lever, etc.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.4	Securing of parts	No loosening of parts impairing Creepage distances or clearances is likely to occur.	P
4.3.5	Connection by plugs and sockets	No mismatching of connectors, plugs or sockets possible.	P
4.3.6	Direct plug-in equipment	The EUT is not direct plug-in equipment.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		N/A
4.3.7	Heating elements in earthed equipment	The equipment does not have any heating elements.	N/A
4.3.8	Batteries	No batteries in the equipment.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not generate dust, powder, does not contain liquid or gas. The unit is specified for office environment.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids .....:		N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation		N/A
4.3.13.1	General		P
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	The LED is considered to comply with the requirements of Class 1 LED product	P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class ..... :		—
4.3.13.5.2	Light emitting diodes (LEDs)	Low power LED used.	—
4.3.13.6	Other types ..... :		N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas ..... :	No hazardous moving parts.	N/A
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……:		N/A
	Considered to cause injury. c) ……:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……:		N/A
4.5	**Thermal requirements**		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L ..... :	Rated load, as specified by Manufacturer.	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	(see appended table 4.5.5)	P

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Clause	Requirement + Test	Result - Remark	Verdict

4.6	**Openings in enclosures**		N/A
4.6.1	Top and side openings	No openings provided	N/A
	Dimensions (mm) .....:		—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottomm, dimensions (mm) ..:	no openings	—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment	Not transportable equipment.	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) .....:		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No barrier secured by adhesive inside enclosure.	N/A
	Conditioning temperature (°C), time (weeks).....:		—

4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditions for a fire enclosure	The fire enclosure is required.	P
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts.	P
4.7.2.2	Parts not requiring a fire enclosure	Plugs and connectors forming part of a power supply cord or interconnecting cable.	P
4.7.3	Materials		P
4.7.3.1	General	Components and materials have adequate flammability classification. Refer to “List of Critical Components”.	P
4.7.3.2	Materials for fire enclosures	Equipment is moveable with mass less than 18 kg. Fire enclosure material is V-1 minimum.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.3	Materials for components and other parts outside fire enclosures	Output cable and connector are made of materials of Class V-2 minimum, insulated with PVC, TFE, PTFE, FEP, neoprene or polyamide.	P
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.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		P
5.1.1	General		P
5.1.2	Configuration of equipment under test (EUT)	EUT has only one mains connection.	P
5.1.2.1	Single connection to an a.c. mains supply	Equipment of figure 5A used.	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	According to Fig. 5A	P
5.1.4	Application of measuring instrument	Measuring instrument D1 was used.	P
5.1.5	Test procedure	The touch current was measured from mains to DC output connector and to a 100 mm x 200 mm metal foil wrapped on accessible non-conductive parts (plastic enclosure).	P
5.1.6	Test measurements		P
	Supply voltage (V) .....:	264 Vac/60Hz	—
	Measured touch current (mA) .....:	For fuse in, Normal or Reverse: 0.64 mA at Secondary Output/Earth; 0.01 mA at Enclosure with metal foil.	—
	Max. allowed touch current (mA) .....:	0,25mA to unearthed accessible parts (output) 3,5mA to earthed accessible parts	—
	Measured protective conductor current (mA) .....:	Not applicable. Measured touch current was lower than 3,5 mA.	—
	Max. allowed protective conductor current (mA)...:	See above.	—
5.1.7	Equipment with touch current exceeding 3,5 mA	Neither stationary permanently connected equipment nor stationary pluggable equipment type B.	N/A
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports ..... :		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	**Electric strength**		P
5.2.1	General	See appended table 5.2. Based on the electric strength test the use of the insulating materials within the equipment is satisfactory.	P
5.2.2	Test procedure	No insulation breakdown detected during the test.	P
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	(see appended Annex B)	N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation ..... :	Functional insulation complies with the requirements c.	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE ..... :	See separate test report IEC/EN 60065.	N/A
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment	The unit is intended for continuous operation. There is no thermal sensor or cut-off for operational condition.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.9.1	During the tests	No flame, melted metal, no fire- cheese cloth on top and tissue paper on bottom remain clean.	P
5.3.9.2	After the tests	The tested units passed the electric strenght test.	P

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Clause	Requirement + Test	Result - Remark	Verdict

6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	**Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment**		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions ..... :		N/A

6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :		—
	Current limiting method ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	**General**		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	**Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)**		N/A
A.1.1	Samples ..... :		—
	Wall thickness (mm) ..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.1.3	Mounting of samples ..... :		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2	**Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)**		N/A
A.2.1	Samples, material ..... :		—
	Wall thickness (mm) ..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.2.3	Mounting of samples ..... :		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C ..... :		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	**Hot flaming oil test (see 4.6.2)**		N/A
A.3.1	Mounting of samples		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	**General requirements**	No motors	N/A
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
B.2	**Test conditions**		N/A
B.3	**Maximum temperatures**		N/A
B.4	**Running overload test**		N/A
B.5	**Locked-rotor overload test**		N/A
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	**Running overload test for d.c. motors in secondary circuits**		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....:		N/A
B.7	**Locked-rotor overload test for d.c. motors in secondary circuits**		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....:		N/A
B.8	**Test for motors with capacitors**		N/A
B.9	**Test for three-phase motors**		N/A
B.10	**Test for series motors**		N/A
	Operating voltage (V) .....:		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		P
	Position .....:		—
	Manufacturer .....:	Refer to Cl.1.5.1	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Type ..... :	ditto	—
	Rated values ..... :	ditto	—
	Method of protection ..... :	ditto	—
C.1	**Overload test**	(see appended table 5.3)	P
C.2	**Insulation**	(see appended table 5.2)	P
	Protection from displacement of windings ..... :	Triple insulated wire is used. No special precaution is required.	P
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	**Measuring instrument**	Measuring instrument D1 was used.	P
D.2	**Alternative measuring instrument**		N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		P
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	**Clearances**		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	**Determination of mains transient voltage (V)**		N/A
G.2.1	AC mains supply ..... :		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation ..... :		N/A
G.3	**Determination of telecommunication network transient voltage (V) ..... :**		N/A
G.4	**Determination of required withstand voltage (V)**		N/A
G.4.1	Mains transients and internal repetitive peaks ..... :		N/A
G.4.2	Transients from telecommunication networks ..... :		N/A
G.4.3	Combination of transients		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.4	Transients from cable distribution systems		N/A
G.5	**Measurement of transient voltages (V)**		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	**Determination of minimum clearances .....:**		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		P
	Metal(s) used .....:	Verified.	—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) .....:		N/A
K.3	Thermostat endurance test; operating voltage (V) .....:		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		N/A
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	Rated load, as specified by Manufacturer.	N/A
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) ..... :		—
M.3.1.2	Voltage (V) ..... :		—
M.3.1.3	Cadence; time (s), voltage (V) ..... :		—
M.3.1.4	Single fault current (mA) ..... :		—
M.3.2	Tripping device and monitoring voltage ..... :		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) ..... :		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		P
	a) Preferred climatic categories ..... :	Approved varistors are used. Refer to List of critical components	P
	b) Maximum continuous voltage ..... :	Approved varistors are used. Refer to List of critical components	P
	c) Combination pulse current ..... :	Approved varistors are used. Refer to List of critical components	P
	Body of the VDR Test according to IEC60695-11-5.....:		N/A
	Body of the VDR. Flammability class of material (min V-1).....:	Approved varistors are used. Refer to List of critical components	P

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Clause	Requirement + Test	Result - Remark	Verdict
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
		See separate test report	—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		P
		See list of critical components. All used triple insulated wires are already approved to Annex U. No additional tests considered required.	—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		P
V.1	Introduction		P
V.2	TN power distribution systems		P
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus ..... :		N/A
Y.2	Mounting of test samples ..... :		N/A
Y.3	Carbon-arc light-exposure apparatus ..... :		N/A
Y.4	Xenon-arc light exposure apparatus ..... :		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		N/A
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		—
CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1……..:		N/A
CC.3	Test program 2……..:		N/A
CC.4	Test program 3.....:		N/A
CC.5	Compliance.....:		N/A
DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……..:		N/A
EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Information of user instructions, maintenance and/or servicing instructions……:		N/A
EE.3	Inadvertent reactivation test……:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Appliance inlet	I-Sheng	7007	2,5 A, 250 V	IEC/EN 60320-1	VDE
Appliance inlet	I-Sheng	7003	10 A, 250 V	IEC/EN 60320-1	VDE
Alt.	various	various	2,5A or 10A, 250 V	IEC/EN 60320-1	S, VDE or other EU certification marks
Fuse(F1)	Conquer	MST	T4 A, 250 V	IEC/EN 60127-2	VDE
Alt.	various	various	T4 A, 250 V	IEC/EN 60127-2	S, VDE or other EU certification marks
Varistor (NZR) (Optional)	Joyin	JVR10N471 K	300 Vac, Φ10mm: coating min. UL94V-1	IEC 61051-2 IEC 60950-1 Annex Q	UL, E325508, VDE
Alt.	various	various	300 Vac, Φ10mm; coating min. UL94V-1	IEC 61051-2 IEC 60950-1 Annex Q	UL, VDE
X-Capacitor (CX1) (optional)	Ultra Tech	HQX	Max. 0.47 µF, Min. 250 V, 100 °C, X1 or X2	IEC/EN60384-14/1993	VDE, UL
Alt.	various	various	Max. 0.47 µF, Min. 250 V, 100 °C, X1 or X2	IEC/EN60384-14/1993	S, VDE or other EU certification marks
Bleeding resistor (R1A, R1B)	various	various	Max. 1 MΩ, 1/4 W, two in series after fuse	Applicable parts of IEC 60950-1	Tested in appliance
Thermistor (TH1)	various	various	Min. 5 A, 1 ohm	Applicable parts of IEC 60950-1	Tested in appliance
Bridge diode (BD1)	various	various	Min 4 A., 600 V	Applicable parts of IEC 60950-1	Tested in appliance
Ripple capacitor (C1)	various	various	120 µF, Min. 420 V, 105°C	Applicable parts of IEC 60950-1	Tested in appliance
Line filter (LF1) (optional)	GlobTek	RC00088	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Alt.	LiTai	RC00088	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Alt.	Xepex	RC00088	105 °C	Applicable parts of IEC 60950-1	Tested in appliance

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Choke (LF2) (optional)	GlobTek	RC00089	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Alt.	LiTai	RC00089	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Alt.	Xepex	RC00089	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Triple insulation wire (Used in LF1 and LF2)	Furukawa	TEX-E	130 °C	IEC/EN 60950-1	VDE, UL
Alt.	Great Leoflon	TRW(B)	130 °C	IEC/EN 60950-1	VDE, UL
Alt.	Cosmolink	TIW-M	130 °C	IEC/EN 60950-1	VDE, UL
Choke (L1) (optional)	GlobTek	RC00085	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Alt.	Xepex	RC00085	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Alt.	LiTai	RC00085	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Choke (L2) (optional)	GlobTek	NF00057	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Alt.	Xepex	NF00057	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Alt.	LiTai	NF00057	105 °C	Applicable parts of IEC 60950-1	Tested in appliance
Y-Capacitor (CY1) (optional)	Murata	KX	Max. 4700 pF, Min. 250 V, 125 °C,Y1	IEC/EN60384-14/1993	VDE, UL
Alt.	various	various	Max. 4700 pF, Min. 250 V, 100 °C,Y1	IEC/EN60384-14/1993	S, VDE or other EU certification marks
Y-Capacitor (CY3) (optional)	Murata	KX	Max. 4700 pF, Min. 250 V, 125 °C, Y2	IEC/EN60384-14/1993	VDE, UL
Alt.	various	various	Max. 4700 pF, Min. 250 V, 100 °C, Y2	IEC/EN60384-14/1993	S, VDE or other EU certification marks
Y-Capacitor (CY2, CY4) (optional)	Murata	KX	Max. 100 pF, Min. 250 V, 125 °C,Y2	IEC/EN60384-14/1993	VDE, UL

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Alt.	various	various	Max. 100 pF, Min. 250 V, 100 °C, Y2	IEC/EN6038 4-14/1993	S, VDE or other EU certification marks
Photo coupler (PH1, PH2)	Sharp	PC817	Dti = 0.4 mm; Int. cr = 5 mm; Ext. cr = 8 mm	IEC/EN 60950-1	TUV, FI
Alt.	Lite-on	LTV817	DtI = 0.4 mm; Int. cr = 4 mm; Ext. cr = 7 mm	IEC/EN 60950-1	VDE, UL
Alt.	Everlight	EL817	Dti = 0.5 mm; Int. cr = 6.0 mm; Ext. cr = 7.7 mm	IEC/EN 60950-1	VDE, UL
MOSFET (Q2)	various	various	Min. 11 A, 600 V	Applicable parts of IEC 60950-1	Tested in appliance
Secondary diode (D15, D16)	various	various	Min. 30 A, 400 V	Applicable parts of IEC 60950-1	Tested in appliance
Output cord	various	various	Min. 300 V, VW-1, 16AWG×2C, 105 °C	Applicable parts of IEC 60950-1, UL758	UL recognized
Transformer (T1)					
Transformer (for 12 V version)	Shenzhen ENG, Janohig Elect. or XEPEX or GlobTek	XF00519	Class F	Applicable parts of IEC 60950-1	Tested in appliance
Transformer (for 24 V verion)	Shenzhen ENG, Janohig Elect. or XEPEX or GlobTek	XF00522	Class F	Applicable parts of IEC 60950-1	Tested in appliance
Transformer (for 48 V version)	Shenzhen ENG, Janohig Elect. or XEPEX or GlobTek	XF00523	Class F	Applicable parts of IEC 60950-1	Tested in appliance
Bobbin of T1	Sumitomo Bakelite Co.,	PM9820, PQ3220	Min. 1.0 mm thick, V-0, 150 °C	Applicable parts of IEC 60950-1, UL 94	UL recognized

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Primary magnet wires	Pacific	M79C& MW80C, (UEWN/U)	Rated 150°C	Applicable parts of IEC 60950-1, UL1446	UL recognized
Alt	Ta Ya Electric Wire	MW79C(TY1700-U155)& MW80C(TYSUN-F155)	Rated 150°C	Applicable parts of IEC 60950-1, UL1446	UL recognized
Alt	Jung Shing Wire Co.Ltd	MW79C(SFFW-2)& MW80C (SFFY-2)	Rated 50°C	Applicable parts of IEC 60950-1, UL1446	UL recognized
Secondary triple insulation wire	Totoku Electric Co., Ltd	TIW- 3	Rated 155°C	IEC/EN 60950-1	VDE, UL
Insulating tape	3M Company	1350F-1	Min. 130 °C	Applicable parts of IEC 60950-1, UL 510	UL recognized
Tube	Great Holding Industrial Co.,Ltd	Teflon tubing 200℃ 300V VW-1 TFT&TFL	Min. 200ºC	Applicable parts of IEC 60950-1,	UL recognized
Plastic Material List:					
Enclosure	Sabic	SE100X	V-0, 80°C, minimum 2.2 mm thick. Measured overall 172.5 by 72.2 by 38 mm. Two parts construction, secured together by screws. Provided opening overall 5.5 by 8.9 mm for output cord.	Applicable parts of IEC 60950-1, UL 94	UL recognized
Enclosure (Alternate)	Sabic	SE1X or PC945	V-0, 105°C, minimum 2.2 mm thick. Measured overall 172.5 by 72.2 by 38 mm. Two parts construction, secured together by screws	Applicable parts of IEC 60950-1, UL 94	UL recognized
Insulating tape (provided on heat-sink)	3M Company	1350T-1	Min. 130 °C	Applicable parts of IEC 60950-1, UL 510	UL recognized

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Heat shrinkable tubing	various	various	Min. 300 V, 125°C, VW-1	Applicable parts of IEC 60950-1, UL 224	UL recognized
PCB	+Techni	+T2A	Min. V-0, 130 °C	Applicable parts of IEC 60950-1, UL 94, UL 746	UL recognized
Mylar sheet	Various	Various	Minimum V-2, min. 105°C, minimum 0.4 mm thick.	Applicable parts of IEC 60950-1, UL 94	UL recognized
Adhesive glue	Various	Various	Minimum 105ºC,		UL recognized

Supplementary information:

1) [1)] **Provided evidence ensures the agreed level of compliance. See OD-CB2039**.

2) **+ means, that components from other vendor and other model number, but with the same or better/higher rating and equivalent approvals are accepted.**

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions) GTA41077P10012					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	1,30	-	117,4	F1	4,0	Rated load at 50Hz
90	1,31	-	117,4	F1	4,0	Rated load at 60Hz
100	1,16	1,8	116,5	F1	4,0	Rated load at 50Hz
100	1,17	1,8	116,6	F1	4,0	Rated load at 60Hz
110	1,05	1,8	116,0	F1	4,0	Rated load at 50Hz
110	1,06	1,8	116,1	F1	4,0	Rated load at 60Hz
120	0,96	1,8	115,4	F1	4,0	Rated load at 50Hz
120	0,97	1,8	115,6	F1	4,0	Rated load at 60Hz
132	0,88	1,8	115,0	F1	4,0	Rated load at 50Hz
132	0,88	1,8	115,3	F1	4,0	Rated load at 60Hz
200	0,59	1,8	114,7	F1	4,0	Rated load at 50Hz
200	0,60	1,8	115,0	F1	4,0	Rated load at 60Hz
220	0,54	1,8	114,6	F1	4,0	Rated load at 50Hz
220	0,55	1,8	115,0	F1	4,0	Rated load at 60Hz
230	0,52	1,8	114,6	F1	4,0	Rated load at 50Hz
230	0,53	1,8	115,0	F1	4,0	Rated load at 60Hz
240	0,51	1,8	114,4	F1	4,0	Rated load at 50Hz
240	0,52	1,8	115,0	F1	4,0	Rated load at 60Hz
264	0,48	-	114,1	F1	4,0	Rated load at 50Hz
264	0,49	-	114,9	F1	4,0	Rated load at 60Hz

Supplementary information:

The steady-state input current did not exceed the rated current at the rated voltage by more than 10% under the maximum normal load (12Vdc@8,33A for GTA-41077P10012).

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions) GTA41077P12024					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	1,55	-	139,3	F1	4,0	Rated load at 50Hz
90	1,55	-	138,9	F1	4,0	Rated load at 60Hz
100	1,39	1,8	138,2	F1	4,0	Rated load at 50Hz
100	1,38	1,8	137,6	F1	4,0	Rated load at 60Hz
110	1,25	1,8	137,4	F1	4,0	Rated load at 50Hz
110	1,24	1,8	136,8	F1	4,0	Rated load at 60Hz
120	1,14	1,8	136,7	F1	4,0	Rated load at 50Hz
120	1,14	1,8	136,1	F1	4,0	Rated load at 60Hz
132	1,04	1,8	136,2	F1	4,0	Rated load at 50Hz
132	1,03	1,8	135,6	F1	4,0	Rated load at 60Hz
200	0,69	1,8	135,7	F1	4,0	Rated load at 50Hz
200	0,70	1,8	135,1	F1	4,0	Rated load at 60Hz
220	0,64	1,8	135,6	F1	4,0	Rated load at 50Hz
220	0,64	1,8	134,9	F1	4,0	Rated load at 60Hz
230	0,61	1,8	135,6	F1	4,0	Rated load at 50Hz
230	0,62	1,8	134,9	F1	4,0	Rated load at 60Hz
240	0,59	1,8	135,5	F1	4,0	Rated load at 50Hz
240	0,59	1,8	134,9	F1	4,0	Rated load at 60Hz
264	0,46	-	135,4	F1	4,0	Rated load at 50Hz
264	0,57	-	134,5	F1	4,0	Rated load at 60Hz

Supplementary information:

The steady-state input current did not exceed the rated current at the rated voltage by more than 10% under the maximum normal load (12Vdc@8,33A for GTA-41077P12024).

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions) GTA41077P12048					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	1,54	-	139,3	F1	4,0	Rated load at 50Hz
90	1,53	-	137,9	F1	4,0	Rated load at 60Hz
100	1,38	1,8	137,2	F1	4,0	Rated load at 50Hz
100	1,37	1,8	137,0	F1	4,0	Rated load at 60Hz
110	1,24	1,8	136,4	F1	4,0	Rated load at 50Hz
110	1,24	1,8	136,2	F1	4,0	Rated load at 60Hz
120	1,13	1,8	135,9	F1	4,0	Rated load at 50Hz
120	1,13	1,8	135,5	F1	4,0	Rated load at 60Hz
132	1,03	1,8	135,3	F1	4,0	Rated load at 50Hz
132	1,03	1,8	135,0	F1	4,0	Rated load at 60Hz
200	0,70	1,8	136,0	F1	4,0	Rated load at 50Hz
200	0,69	1,8	135,3	F1	4,0	Rated load at 60Hz
220	0,64	1,8	135,8	F1	4,0	Rated load at 50Hz
220	0,64	1,8	135,2	F1	4,0	Rated load at 60Hz
230	0,61	1,8	135,7	F1	4,0	Rated load at 50Hz
230	0,62	1,8	135,1	F1	4,0	Rated load at 60Hz
240	0,59	1,8	135,7	F1	4,0	Rated load at 50Hz
240	0,60	1,8	135,0	F1	4,0	Rated load at 60Hz
264	0,56	-	135,5	F1	4,0	Rated load at 50Hz
264	0,47	-	135,6	F1	4,0	Rated load at 60Hz

Supplementary information:

The steady-state input current did not exceed the rated current at the rated voltage by more than 10% under the maximum normal load (12Vdc@8,33A for GTA41077P12048).

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.5 c) 1)	**TABLE: max. V, A, VA test**	P

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
GTA41077P10012 DC output (plus to minus)	8,33	12,04	14.16	164,83
GTA41077P12024 DC output (plus to minus)	5,0	23,93	8,82	191,87
GTA41077P12048 DC output (plus to minus)	2,5	48,17	3.310	159,24
supplementary information:				

2.1.1.5 c) 2)	**TABLE: stored energy**	N/A

Capacitance C (µF)	Voltage U (V)	Energy E (J)
supplementary information:		
<< 20 J		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.7	TABLE: Discharge of capacitors in the primary circuit	P

The unit was connected to 264 .Vac, 50 Hz. A storage oscilloscope was connected across the external point of disconnection of the mains supply. With all switches in the unit initially set to the off position, the unit was disconnected from the supply source. The voltage at the time of disconnection, Vo, and the voltage Vtc at 1 second was recorded.

Model	Location	Time Constant	Measured voltage after 1 sec.	Condition
GTA41077P10012	L to N	903ms	120V	No load.
GTA41077P12024	L to N	893ms	118,5V	No load.
GTA41077P12048	L to N	873ms	118,5V	No load.

Comments: The voltage across the line capacitor did decay to less than 37 percent of its original value in 1 second.

Overall capacity: CX1=0,47μF

Discharge resistor: R1A=R1B=1,0MΩ; τ = 0.47μF x 2,0MΩ = 0,940s

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
GTA41077P12048			
T1 (Pin A →Pin B)	260Vpk	--	D15,16
T1 (Pin B →D15,16)	--	48Vdc	--
GTA41077P12048			
T1 (Pin 5 →Pin 7)	124Vpk	--	D7
T1 (Pin 7 →D7)	--	23Vdc	--

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
*	*

supplementary information:

Comment:

* For SELV reliability testing refer to Table 5.3.

All secondary voltages are within SELV limits.

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.4	**TABLE: Limited current circuit**	P

The unit was connected to 264 Vac, 60 Hz. A 2000 Ohms non-inductive resistor and a switch were connected between the user accessible part of a limited current circuit and either pole of the limited current circuit or earth. A storage oscilloscope was connected across the points under consideration. The switch was closed and voltages on resistor were measured.

Limit values	0,7mA
Circuit(s) tested	Bridging components CY1, CY3
Measured working voltage:	1,12Vpk
Measured frequency	60Hz
Measured current through 2000Ω	CY1 was opened and the 2000 Ω resistor in series to CY1 was connected to output minus and output plus. The output was connected to the PE of simulated TN mains. Current (mA)=0,56mApk
Measured capacitance	Capacitance CY1: 4700 pF; CY3: 4700 pF

Comments:
According to an UL PAG the touch current with D1 was measured between the capacitor to PE.

The dielectric test was performed on the unit (see table dielectric testing) before the above measurements were done.

2.5	**TABLE: Limited power sources**	N/A

Circuit output tested:

Note: Measured Uoc (V) with all load circuits disconnected:

Components	Sample No.	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit

supplementary information:

Sc=Short circuit, Oc=Open circuit

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.6	TABLE: Resistance of earthing conductors and their terminations	P

Using a maximum 12 V dc power source, a current of 40 A was passed between the equipment earthing terminal and the part in the equipment that is required by 2.6.1 to be earthed listed below for a period of 120 s. The voltage drop from the earthing terminal to the accessible metal part required to be earthed was recorded and the resistance was calculated.

Model	Location	Test Current in A	Measured Voltage in (mV)	Calculated Resistance (mΩ)
All models	Earth pin of AC inlet to metal EMC shield	40	0.960	24
	Earth pin of appliance inlet to output"-"	40	1.44	36
Comments:				

2.9.1, 2.9.2, 5.2.2	TABLE: Humidity test	P

A humidity chamber was maintained within 1°C of temperature “t” at a temperature of 25°C. The unit and any other separate components were brought to a temperature between t and t + 4°C They were then placed in the chamber and held at a relative humidity of 93% for a period of 48 hours. Prior to conditioning, parts of the unit (covers) which could be removed without the use of tools were removed and separately placed in the chamber. During conditioning, cable entrances and/or a conduit openings were left open. During this treatment, the unit was not energized.

While still in the humidity chamber, but after all parts have been placed back on the unit, a dielectric potential was applied and maintained for a period of one minute between the points indicated below. During this test, all switching devices (switches, relays, triacs, etc.) in the primary circuit were closed.

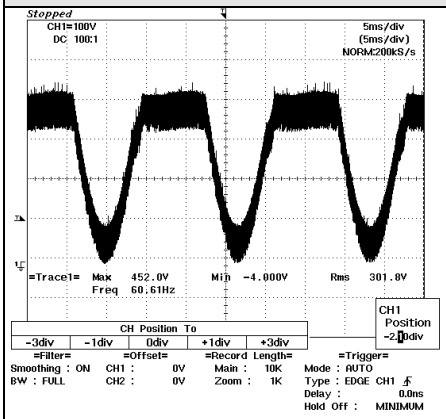
Location	Insulation type	Potential used
Primary to Secondary	reinforced	3000Vac
Primary to Enclosure	reinforced	3000Vac
Comment: There was no breakdown of insulation. All components were tested.		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.2	**Table: working voltage measurement**	P

Location	RMS voltage (V)	Peak voltage (V)	Comments
T1 Primary to Secondary windings	301,8	452	Maximum voltage
Across CY3	156,3	320	

supplementary information:



Input voltage: 240Vac; 60Hz
Test Condition was: rated load

Minus of the output and PE were connected together.

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements	P

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Line to Neutral before Fuse (PWB Trace)	<420	<250	1.5	3,7	2.5	3,7
Fuse leads (PWB Trace)	<420	<250	1.5	2,5	2.5	2,5
Primary to Earth (PWB Trace)	<420	<250	2.0	2,8	2.5	2,8
Primary to Earth (PWB Trace) CY2	<420	<250	2.0	8,0	2.5	8,0
Primary to Earth (PWB Trace) CY4	<420	<250	2.0	3,0	2.5	3,0
Primary (D2) to Secondary (PH2), Component (1 0N Push)	<420	<250	4.0	> 15	5.0	> 15
Primary (D13) to Secondary (HS 4), Component (10N Push)	<420	<250	4.0	12.6	5.0	12.6
Primary to Secondary (PWB trace) C12 → R21 trace	<420	<250	4.0	6,2	5.0	6,2
Primary to Secondary (PWB trace) J9 → R31	<420	<250	4.0	6,1	5.0	6,1
Primary to Secondary (PWB trace) under CY1	<420	<250	4.0	7.0	5.0	7.0
Primary to Secondary (PWB trace) under CY3	<420	<250	4.0	5,8	5.0	6.2
Primary to Secondary, under PH1,PH2 (PWB Trace)	<420	<250	4.0	6.1	5.0	6.1
Primary to Secondary, Transformer T1 (PWB Trace) Pin 6 → Pin 7 trace	452	301,8	4.2	6,6	6,0	6,6
Secondary to Core, Transformer T1	452	301,8	4.2	>10	6,0	>10
Primary to Secondary, Transformer T1	452	301,8	4.2	See note	6,0	See note

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Clause	Requirement + Test	Result - Remark	Verdict

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)

Supplementary information:

Transformer T1
- Triple insulated Fly wire used as secondary (Pin A, Pin B) winding
- Triple insulated wire used as secondary (Pin 6, Pin 7) winding
- All exit leads are provided with sleeving tube
- The core of transformer is considered as primary

- Heat Sink HS3 for Q1, Q2 is provided with 1 layer of insulation tape (3M, 1350T-1 near secondary components side.
- Heat Sink HS4 for Q3 and Q4 is provided with 1 layer insulation tape (3M, 1350T-1) near primary components side.
- Heat Sink on top of the components is provided with insulation tape (3M, 1350T-1) near secondary component side.
- Coil windings of L1 is covered with insulation tape
- Protective bonding wire connection to the appliance inlet is sleeved with shrinkable tubing
- Glued components: CY2, F1, NZR, TH1, LF1, LF2, CX1, C2A, C2B, L1, R1, C13, D2, C2, R2, CY1, CY3, C7, C8.
- Mylar sheet is provided around the PCB, between the unit and the metal shield

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.5	TABLE: Distance through insulation measurements					P
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Enclosure		340	240	3000 Vac	0,4	2,2 min
Photo-coupler (reinforced insulation)		340	240	3000 Vac	0,4	1)
Mylar sheet		340	240	1500 Vac	0,2	0,4
Note(s): 1) refer to Cl.: 1.5.1						

2.10.3, 4.2.2, 4.2.3, 4.2.4	TABLE: Steady force test (internal spacings push test)	P

Components and parts, other than parts serving as an enclosure, are subjected to a steady force of 10 N ± 1 N.

Parts of an enclosure located in Operator Access Area, which are protected by a cover or door, are subjected to a steady force of 30 N ± 3 N for a period of 5 s, applied by means of a straight unjointed version of the test finger, to the part on or within the equipment.

External enclosures are subjected to a steady force of 250 N ± 10 N for a period of 5 s, applied in turn to the top, bottom and sides of the enclosure fitted to the equipment, by means of a suitable test tool providing contact over a circular plane surface 30 mm in diameter. However, this test is not applied to the bottom of an enclosure of equipment having a mass of more than 18 kg.

Part	Thickness	Force	Observation
Components	—	10 N	for glued components see 2.10.3 and 2.10.4
Outer Enclosure		250 N	No damage
Comments:			

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.2.5	**TABLE: Impact Test**	P

A sample consisting of the complete enclosure represented the largest area was supported in its normal position. A solid smooth steel ball, approximately 50 mm in diameter and with a mass of 500 g was permitted to fall freely from the rest through a vertical distance of 1,3 m onto the sample.

A dielectric test from primary to earth and primary to secondary was conducted after the test.

Part	Thickness	Observation
All sides	2,2 mm	No hazardous parts accessible.

Dielectric test after the steel ball test:

Location	Insulation type	Potential used
Primary to secondary (reinforced)	Reinforced	3000 Vac
Between parts separated by double or reinforced insulation (L/N to Enclosure with foil)	Reinforced	3000 Vac
Between parts separated by basic or supplementary insulation (L/N earth)	Basic	1500 Vac

Comment: No breakdown of insulation.

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available									
Is it possible to install the battery in a reverse polarity position?									
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									
Test results:									Verdict
- Chemical leaks									
- Explosion of the battery									
- Emission of flame or expulsion of molten metal									
- Electric strength tests of equipment after completion of tests									
Supplementary information: There is no battery within the unit.									

4.3.8	TABLE: Batteries	N/A
Battery category.....: Manufacturer.....: Type / model .....: Voltage.....: Capacity .....: Tested and Certified by (incl. Ref. No.).....: Circuit protection diagram:		
Supplementary information: There is no battery within the unit.		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	
Language(s) ……..:	
Close to the battery ……..:	
In the servicing instructions ……:	
In the operating instructions ……..:	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures:						P
	test voltage (V) .....:	90	90	132	132		—
	Frequency (Hz)	60	60	60	60		—
	t_{amb1} (°C) .....:	--	--	--	--		—
	t_{amb2} (°C) .....:	25,4	40	24,4	40		—
maximum temperature T of part/at:		T (°C)					allowed T_{max} (°C)
GTA41077P10012							
1. Appliance inlet near phase pin		52,7	67,3	47.1	62,7		70
2. LF2 winding		87,7	102,3	74.9	90,5		105
3. LF1 winding		84,4	99	73.5	89,1		105
4. L1 winding		87,7	102,3	76,2	91,8		105
5. L2 coil		87,6	102,2	76,8	92,4		105
6. BD1 body		84,4	99	75,4	91		130
7.El. Capacitor C1		88,8	103,4	80,1	95,7		105
8.Heat Sink near D1		88.1	102,7	78,2	93,8		130
9.Heat Sink near Q1		88.8	103,4	77,6	93,2		130
10.Heat Sink near Q2		88.8	103,4	77,2	92,8		130
11.T1 winding		96.3	110,9	88,0	103,6		130
12.T1 core		88.7	103,3	80,8	96,4		130
13.El. Capacitor C5		84.9	99,5	76,8	92,4		105
14.Heat Sink near Q3/Q4		86.8	101,4	79,1	94,7		130
15.PH2 body		88.7	103,3	80,4	96		110
16.Output wire		33.5	48,1	33,1	48,7		60
17.Enclosure outside-top side		63.9	78,5	58,3	73,9		95
18.Enclosure outside-left side		58.3	72,9	53,0	68,6		95
19.Enclosure outside-right side		62.7	77,3	50,9	66,5		95
20.Enclosure outside-bottom side		69.9	84,5	63,0	78,6		95

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Note: The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described in sub-clause 1.4.5 (manufacturer declaration as ±10%).

With a specified ambient temperature of 40°C, the max. Temperature rise is calculated as follows:

- Winding components:

  - Transformer T1 (Class F) → Tmax = 140ºC -10=130°C

- - Electrolyte capacitors→ Tmax = 105 °C

  - Maximum absolute temperature of Choke LF1, LF2 → Tmax = 105 °C

  - Maximum absolute temperature of Choke L1, L2 → Tmax = 105 °C

  - Maximum absolute temperature of PWB → Tmax=130 °C

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures:						P
	test voltage (V) .....:	200	200	264	264		—
	Frequency (Hz)	50	50	50	50		—
	t_{amb1} (°C) .....:	--	--	--	--		—
	t_{amb2} (°C) .....:	24,8	40	25,0	40		—
maximum temperature T of part/at:		T (°C)					allowed T_{max} (°C)
GTA41077P10012							
1. Appliance inlet near phase pin		46,3	61,5	46,7	61,7		70
2. LF2 winding		71,5	86,7	72,0	87		105
3. LF1 winding		71,1	86,3	71,6	86,6		105
4. L1 winding		74,1	89,3	76,0	91		105
5. L2 coil		75,5	90,7	75,6	90,6		105
6. BD1 body		73,2	88,4	73,8	88,8		130
7.El. Capacitor C1		78,6	93,8	79,3	94,3		105
8.Heat Sink near D1		76,0	91,2	76,6	91,6		130
9.Heat Sink near Q1		76,6	91,8	77,5	92,5		130
10.Heat Sink near Q2		79,1	94,3	79,9	94,9		130
11.T1 winding		86,6	101,8	87,4	102,4		130
12.T1 core		79,9	95,1	80,7	95,7		130
13.El. Capacitor C5		75,9	91,1	76,6	91,6		105
14.Heat Sink near Q3/Q4		78,9	94,1	79,6	94,6		130
15.PH2 body		79,5	94,7	80,3	95,3		110
16.Output wire		32,6	47,8	32,8	47,8		60
17.Enclosure outside-top side		57,8	73	58,5	73,5		95
18.Enclosure outside-left side		52,7	67,9	53,5	68,5		95
19.Enclosure outside-right side		56,6	71,8	57,1	72,1		95
20.Enclosure outside-bottom side		62,6	77,8	63,5	78,5		95

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Note: The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described in sub-clause 1.4.5 (manufacturer declaration as ±10%).

With a specified ambient temperature of 40°C, the max. Temperature rise is calculated as follows:

- Winding components:

  - Transformer T1 (Class F) → Tmax = 140ºC -10=130°C

- - Electrolyte capacitors→ Tmax = 105 °C

  - Maximum absolute temperature of Choke LF1, LF2 → Tmax = 105 °C

  - Maximum absolute temperature of Choke L1, L2 → Tmax = 105 °C

- Maximum absolute temperature of PWB → Tmax=130 °C

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures:						P
	test voltage (V) .....:	90	90	132	132		—
	Frequency (Hz)	60	60	60	60		—
	t_{amb1} (°C) .....:	--	--	--	--		—
	t_{amb2} (°C) .....:	23,5	40	24,0	40		—
maximum temperature T of part/at:		T (°C)					allowed T_{max} (°C)
GTA41077P12024							
1. Appliance inlet near phase pin		46,5	63	43,1	59,1		70
2. LF2 winding		88,0	104,5	75,5	91,5		105
3. LF1 winding		85,8	102,3	74,8	90,8		105
4. L1 winding		85,3	101,8	75,1	91,1		105
5. L2 coil		86,7	103,2	77,9	93,9		105
6. BD1 body		88,7	105,2	77,7	93,7		130
7.El. Capacitor C1		86,5	103	77,9	93,9		105
8.Heat Sink near D1		89,5	106	79,3	95,3		130
9.Heat Sink near Q1		89,0	105,5	77,9	93,9		130
10.Heat Sink near Q2		87,9	104,4	78,2	94,2		130
11.T1 winding		95,7	112,2	87,6	103,6		130
12.T1 core		88,1	104,6	80,2	96,2		130
13.El. Capacitor C5		83,3	99,8	75,4	91,4		105
14.Heat Sink near Q3/Q4		90,7	107,2	83,7	99,7		130
15.PH2 body		86,1	102,6	77,9	93,9		110
16.Output wire		36,6	53,1	35,9	51,9		60
17.Enclosure outside-top side		63,3	79,8	58,7	74,7		95
18.Enclosure outside-left side		61,6	78,1	56,2	72,2		95
19.Enclosure outside-right side		60,3	76,8	55,7	71,7		95
20.Enclosure outside-bottom side		70,5	87	64,4	80,4		95

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Note: The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described in sub-clause 1.4.5 (manufacturer declaration as ±10%).

With a specified ambient temperature of 40°C, the max. Temperature rise is calculated as follows:

- Winding components:

  - Transformer T1 (Class F) → Tmax = 140ºC -10=130°C

- - Electrolyte capacitors→ Tmax = 105 °C

  - Maximum absolute temperature of Choke LF1, LF2 → Tmax = 105 °C

  - Maximum absolute temperature of Choke L1, L2 → Tmax = 105 °C

- Maximum absolute temperature of PWB → Tmax=130 °C

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures:						P
	test voltage (V) .....:	200	200	264	264		—
	Frequency (Hz)	50	50	50	50		—
	t_{amb1} (°C) .....:	--	--	--	--		—
	t_{amb2} (°C) .....:	24,1	40	24,6	40		—
maximum temperature T of part/at:		T (°C)					allowed T_{max} (°C)
GTA41077P12024							
1. Appliance inlet near phase pin		41,9	57,8	41,6	57		70
2. LF2 winding		71,1	87	70,0	85,4		105
3. LF1 winding		71,2	87,1	70,1	85,5		105
4. L1 winding		71,9	87,8	71,8	87,2		105
5. L2 coil		75,1	91	73,5	88,9		105
6. BD1 body		73,6	89,5	72,4	87,8		130
7.El. Capacitor C1		75,3	91,2	74,5	89,9		105
8.Heat Sink near D1		74,9	90,8	74,0	89,4		130
9.Heat Sink near Q1		74,7	90,6	74,1	89,5		130
10.Heat Sink near Q2		75,6	91,5	74,9	90,3		130
11.T1 winding		84,8	100,7	84,3	99,7		130
12.T1 core		78,1	94	77,5	92,9		130
13.El. Capacitor C5		73,0	88,9	72,4	87,8		105
14.Heat Sink near Q3/Q4		82,4	98,3	82,0	97,4		130
15.PH2 body		75,6	91,5	75,0	90,4		110
16.Output wire		35,8	51,7	35,8	51,2		60
17.Enclosure outside-top side		57,1	73	56,4	71,8		95
18.Enclosure outside-left side		55,2	71,1	55,1	70,5		95
19.Enclosure outside-right side		54,3	70,2	53,8	69,2		95
20.Enclosure outside-bottom side		63,0	78,9	62,1	77,5		95

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Note: The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described in sub-clause 1.4.5 (manufacturer declaration as ±10%).

With a specified ambient temperature of 40°C, the max. Temperature rise is calculated as follows:

- Winding components:

  - Transformer T1 (Class F) → Tmax = 140ºC -10=130°C

- - Electrolyte capacitors→ Tmax = 105 °C

  - Maximum absolute temperature of Choke LF1, LF2 → Tmax = 105 °C

  - Maximum absolute temperature of Choke L1, L2 → Tmax = 105 °C

- Maximum absolute temperature of PWB → Tmax=130 °C

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures:						P
	test voltage (V) .....:	90	90	132	132		—
	Frequency (Hz)	60	60	60	60		—
	t_{amb1} (°C) .....:	--	--	--	--		—
	t_{amb2} (°C) .....:	25,7	40	26,4	40		—
maximum temperature T of part/at:		T (°C)					allowed T_{max} (°C)
GTA41077P12048							
1. Appliance inlet near phase pin		47,0	61,3	47,5	61,1		70
2. LF2 winding		77,2	91,5	72,8	86,4		105
3. LF1 winding		75,9	90,2	72,2	85,8		105
4. L1 winding		78,9	93,2	74,6	88,2		105
5. L2 coil		79,2	93,5	75,5	89,1		105
6. BD1 body		80,2	94,5	76,3	89,9		130
7.El. Capacitor C1		78,8	93,1	77,8	91,4		105
8.Heat Sink near D1		82,7	97	79,0	92,6		130
9.Heat Sink near Q1		80,0	94,3	76,2	89,8		130
10.Heat Sink near Q2		79,9	94,2	77,0	90,6		130
11.T1 winding		87,3	101,6	86,6	100,2		130
12.T1 core		79,4	93,7	78,6	92,2		130
13.El. Capacitor C5		73,6	87,9	72,6	86,2		105
14.Heat Sink near Q3/Q4		80,7	95	80,7	94,3		130
15.PH2 body		76,5	90,8	75,6	89,2		110
16.Output wire		32,9	47,2	33,3	46,9		60
17.Enclosure outside-top side		57,3	71,6	57,0	70,6		95
18.Enclosure outside-left side		54,8	69,1	55,1	68,7		95
19.Enclosure outside-right side		54,0	68,3	53,7	67,3		95
20.Enclosure outside-bottom side		61,2	75,5	62,0	75,6		95

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Note: The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described in sub-clause 1.4.5 (manufacturer declaration as ±10%).

With a specified ambient temperature of 40°C, the max. Temperature rise is calculated as follows:

- Winding components:

  - Transformer T1 (Class F) → Tmax = 140ºC -10=130°C

- - Electrolyte capacitors→ Tmax = 105 °C

  - Maximum absolute temperature of Choke LF1, LF2 → Tmax = 105 °C

  - Maximum absolute temperature of Choke L1, L2 → Tmax = 105 °C

- Maximum absolute temperature of PWB → Tmax=130 °C

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures:						P
	test voltage (V) .....:	200	200	264	264		—
	Frequency (Hz)	50	50	50	50		—
	t_{amb1} (°C) .....:	--	--	--	--		—
	t_{amb2} (°C) .....:	25,4	40	25,4	40		—
maximum temperature T of part/at:		T (°C)					allowed T_{max} (°C)
GTA41077P12048							
1. Appliance inlet near phase pin		47,1	61,7	45,5	60,1		70
2. LF2 winding		70,2	84,8	68,1	82,7		105
3. LF1 winding		70,2	84,8	67,6	82,2		105
4. L1 winding		72,1	86,7	71,8	86,4		105
5. L2 coil		72,5	87,1	71,3	85,9		105
6. BD1 body		71,7	86,3	70,9	85,5		130
7.El. Capacitor C1		74,7	89,3	74,1	88,7		105
8.Heat Sink near D1		74,2	88,8	73,4	88		130
9.Heat Sink near Q1		73,0	87,6	72,5	87,1		130
10.Heat Sink near Q2		74,2	88,8	73,7	88,3		130
11.T1 winding		84,2	98,8	83,7	98,3		130
12.T1 core		76,9	91,5	76,4	91		130
13.El. Capacitor C5		70,5	85,1	70,0	84,6		105
14.Heat Sink near Q3/Q4		80,7	95,3	80,4	95		130
15.PH2 body		73,4	88	73,0	87,6		110
16.Output wire		32,3	46,9	33,1	47,7		60
17.Enclosure outside-top side		55,4	70	55,5	70,1		95
18.Enclosure outside-left side		53,6	68,2	53,6	68,2		95
19.Enclosure outside-right side		52,5	67,1	52,6	67,2		95
20.Enclosure outside-bottom side		60,7	75,3	59,9	74,5		95

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Note: The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described in sub-clause 1.4.5 (manufacturer declaration as ±10%).

With a specified ambient temperature of 40°C, the max. Temperature rise is calculated as follows:

- Winding components:

  - Transformer T1 (Class F) → Tmax = 140ºC -10=130°C

- - Electrolyte capacitors→ Tmax = 105 °C

  - Maximum absolute temperature of Choke LF1, LF2 → Tmax = 105 °C

  - Maximum absolute temperature of Choke L1, L2 → Tmax = 105 °C

- Maximum absolute temperature of PWB → Tmax=130 °C

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) .....:	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Enclosure material GE Plastics SE1X. SE100X	125	1,0
Supplementary information: Approved materials are used. Refer to list of safety critical components.		

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Supplementary information: Approved materials are used. Refer to list of safety critical components.					

5.1	TABLE: touch current measurement			P
Parts tested	Input	Measured voltage (U2)	Calculated current (mA)	Comments/ Verdict
L/N to enclosure with metal foil	264 Vac / 60 Hz	--	0,001	P
L/N to +/- output	264 Vac / 60 Hz	--	0,64	P
Comments: The measured touch current did not exceed 0,7 mA.				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
For unit				
L/N to PE (basic)		AC	1500	No
L/N to SELV (reinforced)		AC	3000	No
Transformer T1				
Primary to secondary (reinforced)		AC	3000	No
Secondary to core (reinforced)		AC	3000	No
1 Layer Insulation tape 1350F-1, 1350T-1		AC	3000	No
Mylar sheet		AC	3000	No
Supplementary information: For measurement to enclosure aluminium foil was wrapped around enclosure. Electric strength test for unit performed also after humidity exposure.				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	TABLE: fault condition tests						P
	ambient temperature (°C)				25,0°C		—
	model/type of power supply						—
	manufacturer of power supply				GlobTek		—
	rated markings of power supply						—
component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result	
SELV reliability Testing							
Model GTA41077P12048							
Output Diode D7	Short	264	>30min	F1	0.146→0,73 →0,146	Unit cycle protection immediately, no hazards. Output voltge 2,03V→1,112V→2,03 V dc	
Secondary Pin A to C3 +	Short	264	< 1sec	F1	>8	Unit protection (F1) immediately, no hazards.	
Model GTA41077P12024/GTA41077P10012							
Output Diode D7	Short	264	>30min	F1	0,588	Normal operation, output voltage 23,8V	
Q4	Short	264	>30min	F1	0,09→0,06 →0,09	Unit protection immediately, no hazards. Output voltage 0,07V	
Annex C Transformer overload / short (clause 5.3.3)							
Model GTA41077P10012							
T1 pin A to pin B	Short	264	<1sec	F1	>8,0	Unit protection (F1) immediately, no hazards.	
T1 pin 7 to pin 8	Short	264	>10min	F1	0,1	Unit protection immediately, shut down, no hazards.	
T1 pin A to pin B	Overload	264	2h	F1	0,7	0.2A increased to 0.3A, unit shutdown ,no hazards.	
Model GTA41077P12024							
T1 pin A to pin B	Short	264	<1 s	F1	>8,0	Unit protection (F1) immediately, no hazards.	
T1 pin 7 to pin 8	Short	264	>10min	F1	0,1	Unit protection immediately, shut down, no hazards.	
T1 pin A to pin B	Overload	264	2h	F1	0,7	0.2A increased to 0.3A, unit shutdown, no hazards.	
Model GTA41077P12048							
T1 pin A to pin B	Short	264	<1sec	F1	>8,0	Unit protection (F1) immediately, no hazards.	
T1 pin 7 to pin 8	Short	264	>10min	F1	0,1	Unit protection immediately, shut down, no hazards.	
T1 pin A to pin B	Overload	264	2h	F1	0,7	0.2A increased to 0.3A, unit shutdown ,no hazards.	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Misuse						
Model GTA41077P10012						
+12V	Short	90	60min	F1	0,247	Unit protection immediately, shut down, no hazards.
+12V	Overload	90	30min	F1	2,1→0,4	Output 13,5A / 7,6Vdc for 15 min before shut down, than 12,9A Max temperature recorded 90ºC
+12V	Overload	264	60min	F1	0,8 →0,79A	Output 13,9A for 15min before shut down. than 13,23A Max temperature recorded 104ºC
Method C – functional insulation (clause 5.3.4)						
Model GTA41077P12048						
BD1 AC to +	Short	264	<1sec	F1	>8.0	Unit protection (F1) immediately, no hazards.
C2A	Short	264	<1sec	F1	>8.0	Unit protection (F1) immediately, no hazards.
Additional Component faults						
Model GTA41077P12048						
PH1 secondary	Short	264	10min	F1	0.5	Unit normal operation, no hazards
PH1 primary	Short	264	10min	F1	0.04	Unit protection immediately, shut down, no hazards.
PH2 secondary	Short	264	10min	F1	0.04	Unit protection immediately, shut down, no hazards.
PH2 primary	Short	264	10min	F1	0.04	Unit protection immediately, shut down, no hazards.
Q2 G to D	Short	264	1sec	F1	>8	Unit protection (F1) immediately, no hazards
Q2 G to S	Short	264	10min	F1	0.1	Unit protection immediately, shut down, no hazards.
Q2 D to S	Short	264	1sec	F1	>8	Unit protection (F1) immediately, no hazards
PH1 pin1	Open	264	10min	F1	0.5	Unit normal operation, no hazards
PH2 pin1	Open	264	10min	F1	0.5	Unit normal operation, no hazards
R1	Open	264	3 min	F1	>8	Unit protection (F1) immediately, no hazards
D5	Short	264	10 min	F1	0.5	Normal operation, no hazards
R6	Open	264	3 min	F1	>8	Unit protection (F1) immediately, no hazards
R3	Short	264	10 min	F1	0.5	Normal operation, no hazards
Z2	Open	264	10 min	F1	0.5	Normal operation, no hazards

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

R2	Open	264	10 min	F1	0.5	Normal operation, no hazards
IC2	Open	264	10 min	F1	0.5	Normal operation, no hazards
D4	Short	264	10 min	F1	0.5	Normal operation, no hazards
R4	Open	264	3 min	F1	>8	Unit protection (F1) immediately, no hazards
R8	Short	264	10 min	F1	0.5	Normal operation, no hazards
R7	Short	264	10 min	F1	0.04	Unit shutdown, no hazards
R21	Open	264	10 min	F1	0.04	Unit shutdown, no hazards
Q1 (G-D)	Short	264	1 sec	F1	>8	Unit protection (F1) immediately, no hazards
Q1 (D-S)	Short	264	1 sec	F1	>8	Unit protection (F1) immediately, no hazards

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
Prim-Sec	Reinforced insulation	452Vpeak	301,8 Vrms	3000 Vac	4,2 mm	6,0 mm	0,4 mm
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
Pri-sec.	Reinforced insulation			3000 Vac	See 1)	See 1)	See 2)
supplementary information:							
1) See appended table 2.10.3 – 2.10.4 for details.							
2) Separately approved triple insulation wire used.							

C.2	TABLE: transformers	P
See enclosure No. 3 for transformer specifications.		

Enclosure No. 1

National differences to IEC 60950-1:2005 + A1:2009 + A2:2013

(46 pages including this cover page)

IEC60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 (AUSTRALIA/NEW ZEALAND) NATIONAL DIFFERENCES

(Information technology equipment-safety)

Differences according to ..... : AS/NZS 60950.1:2015
Attachment Form No..... : AU_NZ_ND_IEC60950_1F
Attachment Originator..... : JAS-ANZ
Master Attachment..... : 2017-06

	National Differences		P
Appendix ZZ	Variations to IEC 60950-1, Ed 2.2 (2013) for Australia and New Zealand		P
1.2	**DEFINITIONS**		P
	After definition 'PERSON, SERVICE', insert the following new definition: POTENTIAL IGNITION SOURCE…….1.2.12.201		P
1.5	**COMPONENTS**		N/A
1.5.1	1. .....First paragraph, insert the following text after the words 'IEC component standard: or the relevant Australian/New Zealand Standard 2 ..... In the Note, insert the following text after the word standard: or the relevant Australian/New Zealand Standard 3 ..... Second paragraph, delete the words 'without further evaluation'		N/A
1.5.2	1 .....First paragraph, insert the following text after the word 'standard' or an Australian/New Zealand Standard 2 .....First paragraph, second dash item, second line, insert the following text after the word 'standard' or an Australian/New Zealand Standard 3 .....First paragraph, second dash item, last line, insert the following text after the word 'standard': or an Australian/New Zealand Standard		N/A
1.7	**MARKINGS AND INSTRUCTIONS**		N/A

<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>1.7.1.3</td><td>Delete existing text and replace with the following:
Graphical symbols placed on the equipment as a requirement of this standard, shall be in accordance with IEC 60417 or ISO 3864-2 or ISO 7000, if available. In the absence of suitable symbols, the manufacturer may design specific graphical symbols.
Symbols as required by this standard placed on the equipment shall be explained in the user manual</td><td></td><td>N/A</td></tr>
<tr><td>2.9</td><td>ELECTRICAL INSULATION</td><td></td><td>N/A</td></tr>
<tr><td>2.9.2</td><td>Variation
Second paragraph, delete the word ‘designated’</td><td></td><td>N/A</td></tr>
<tr><td>3.2.5</td><td>POWER SUPPLY CORDS</td><td></td><td>N/A</td></tr>
<tr><td>Table 3B</td><td>Variation
1..... Dele te the first four rows and replace with the following:
<table>
<tr><td>Over 0.2 up to and including 3</td><td>0.5[a]</td><td>18
[0.8]</td></tr>
<tr><td>Over 3 up to and including 7.5</td><td>0.75</td><td>16
[1.3]</td></tr>
<tr><td>Over 7.5 up to including 10</td><td>(0.75)[b]
1.00</td><td>16
[1.3]</td></tr>
<tr><td>Over 10 up to including 16</td><td>(1.0)[c]
1.5</td><td>14
[2]</td></tr>
</table></td><td></td><td>N/A</td></tr>
<tr><td></td><td>2..... Dele te NOTE 1 and renumber existing NOTE 2 as ‘NOTE’</td><td></td><td>N/A</td></tr>
<tr><td></td><td>3..... Dele te Footnote [a] and replace with the following:
[a] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the to the plug does not exceed 2 m (0,5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191)</td><td></td><td>N/A</td></tr>
<tr><td>4.3</td><td>DESIGN AND CONSTRUCTION</td><td></td><td>N/A</td></tr>
<tr><td>4.3.6</td><td>Variation
Delete the third paragraph and replace with the following:</td><td></td><td>N/A</td></tr>
<tr><td></td><td>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets</td><td></td><td>N/A</td></tr>
<tr><td>4.3.8</td><td>Addition
Eighth paragraph, insert the following new note after the first dash item:</td><td></td><td>N/A</td></tr>
<tr><td></td><td>NOTE 6.201 In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.</td><td></td><td></td></tr>
</table>

4.3.13.5.1	Variation *Delete* the first paragraph and *replace* with the following: Except as permitted below, equipment shall be classified and labelled according to IEC 60825-1 or AS/NZS 60825.1, IEC 60825-2 or AS/NZS 60825.2 and IEC 60825-12, as applicable		N/A
	Third paragraph, first sentence, after 'IEC 60825-1', *insert* the following text: or AS/NZS 60825.1		N/A
	Fourth paragraph, after 'IEC 60825-1', *insert* the following text: or AS/NZS 60825.1		N/A
4.7	**RESISTANCE TO FIRE**		N/A
4.7	Addition At the end of Clause 4.7, *insert* the following text: For alternate tests refer to Clause 4.7.201		N/A
6	**CONNECTION TO TELECOMMUNICATIONS NETWORKS**		N/A
6.2.2	Variation For Australia only, *delete* the first paragraph and Note, and *replace* with the following: In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2		N/A
6.2.2.1	Variation For Australia only, *delete* the first paragraph including the Notes, and *replace* with the following: In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator Reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, Uc, is: (i)..... for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and (ii)..... For 6.2.1 b) and 6.2.1 c): 1.5kV		N/A
	NOTE 201 The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines		N/A
	NOTE 202 The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages		N/A
6.2.2.2	Variation For Australia only, delete the second paragraph including the Note, and replace with the following: In Australia only, the a.c. test voltage is (i).....for 6.2.1 a): 3kV; and (ii).....for 6.2.1b) and 6.2.1c): 1.5kV		N/A
	NOTE 201 Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.		N/A
	NOTE 202 The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
7	**CONNECTION TO CABLE DISTRIBUTION NETWORK**		N/A

7.3	Addition *Add* the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes		N/A
Annex P	Addition *Add* the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets		N/A

	Special national conditions (if any)		N/A
1.2.12	**FLAMMABILITY**		N/A
1.2.12.15	Addition After Clause 1.2.12.15, *insert* the following new clause:		N/A
1.2.12.201	**POTENTIAL IGNITION SOURCE** Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA		N/A
	Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS		N/A
	NOTE 1 An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE		N/A
	NOTE 2 This definition is from AS/NZS 60065:2012, Clause 2.8.11.		N/A
4	**PHYSICAL REQUIREMENTS**		N/A
4.1	Addition After Clause 4.1, *insert* new Clause 4.1.201 as follows:		N/A
4.1.201	**Display devices used for television purposes** Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television receivers, specified in AS/NZS 60065		N/A
4.3	**DESIGN AND CONSTRUCTION**		N/A
4.3.8	Addition After Clause 4.3.8, *add* the following new clause as follows		N/A
4.3.8.201	**Products containing coin/button cell batteries and batteries designated R1** The requirements of AS/NZS 60065:2012 Amendment 1:2015, Clause 14.10.201 apply for this Clause.		N/A
4.7	**RESISTANCE TO FIRE**		N/A

4.7.3.6	Addition After Clause 4.7.3.6, *add* new clauses as follows:		N/A
4.7.201	**Resistance to fire—Alternative tests**		N/A
4.7.201.1	**General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the apparatus, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.		N/A
	b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1,750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10		N/A
	NOTE In considering how to minimize propagation of fire and what 'small parts are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another		N/A
	Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5		N/A
	For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5		
	The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring		N/A
4.7.201.2	**Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.		N/A

4.7.201.3	**Testing of insulating materials** Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE Contacts in components such as switch contacts are considered to be connections. For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested. The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		N/A

	Clause of AS/NZS 60695.11.5	**Change**	N/A
	9 Test procedure		
	9.2 Application of Needle-flame	*Delete* the first and second paragraphs and *replace* with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s ± 1 s	
	9.3 Number of test specimens	*Delete* existing text and *replace* with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.	
	11 Evaluation of test results	*Delete* existing text and *replace* with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15s	
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the sample tested was not thicker than the relevant part		N/A
4.7.201.4	**Testing in the event of non-extinguishing material** If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3 by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.		N/A

	NOTE 1 If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing.		N/A
	NOTE 2 If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing		N/A
	NOTE 3 Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		N/A
4.7.201.5	**Testing of printed boards** The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE.		N/A
	The test is not carried out if the – Printed board does not carry any POTENTIAL IGNITION SOURCE; – Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely . *Compliance shall be determined using the smallest thickness of the material.*		N/A
	NOTE Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power for more than 2 m when the circuit supplied is disconnected.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
KOREA - Differences to IEC 60950-1, Second Edition (2005) + A1:2009 (2012-05-31)			
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	Built-in product.	N/A
8: EMC	The apparatus shall comply with the relevant CISPR standards	End product consideration.	N/A

ATTACHMENT TO TEST REPORT IEC 60950-1 with A1: 2009 and A2:2013 **U.S.A. NATIONAL DIFFERENCES** Information technology equipment – Safety – Part 1: General requirements	
Differences according to.....:	UL 60950-1-07(Second Edition) + A1: 2011 + A2: 2014
Attachment Form No.....:	US_ND_IEC60950_1F
Attachment Originator.....:	UL
Master Attachment.....:	Date 2014-07

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
Special national conditions			
1.1.1	All equipment is designed as to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and if applicable, the National Electrical Safety Code, IEEE C2		P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75		P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A		P
1.5.5	For lengths exceeding 3,05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the /NEC		N/A
	For lengths 3,05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings		N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings	Single phase unit.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions"		N/A
	Likewise, a voltage rating is not to be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions"		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with NEC or CEC Part 1 or NEC are marked with the voltage rating and “Class 2” or equivalent		N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable		P
2.6	Equipment with isolated ground (earthing) receptacles is in compliance with NEC 250.146(D) and CEC 10-112 and 10-906(8)	Considered.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC		N/A
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements		N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs		N/A
3.2.5	Power supply cords are no longer than 4.5 m in length		N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC		N/A
3.2.9	Permanently connected equipment has a suitable wiring compartment and wire bending space		N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0		N/A
3.3.3	Wire binding screws are not attached with conductors larger than 10 AWG (5,3 mm2)		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7)		N/A
3.3.5	Revise first column of Table 3E to “Smaller of the rated current of the equipment or the protective current rating of the circuit under consideration”		N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,		N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30		N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.5.1	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0,76 m3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0,9m2 (10 sq ft) or a single dimension greater than 1,8 m (6 ft) have a flame spread rating of 50 or less		N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less		N/A
4.7.3.1	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043		N/A
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370)		N/A
Other National Differences			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery backup systems, battery packs, cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cut-offs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables	The components fulfil the requirements of the standard and in addition P1 and P2 of UL60950 and CSA 22.2-60950 was applied.	P

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply		N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42,4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts		N/A
2.6.2	Equipment with functional earthing marked with the functional earthing symbol (IEC 60417-6092)		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT		N/A
4.3.2	Equipment with handles complies with special loading tests		N/A
4.3.8	Battery packs for both portable and stationary applications comply with special component requirements		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded		N/A
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test is repeated twice (three tests total) using new components as necessary		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC		N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger		N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements		N/A

CANADA NATIONAL DIFFERENCES to IEC 60950-1, Second Edition (2005) + A1:2009 + A2:2013 (2014-09-13) National standard: CAN/CSA-C22.2 NO. 60950-1A-07

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Special national conditions			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.		P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
1.5.5	For lengths exceeding 3,05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC.		N/A
	For lengths 3,05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Single phase unit.	N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and “Class 2” or equivalent.		N/A
	Marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.		N/A
2.6	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	20 A protective current was considered.	P
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.		N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length.		N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	Minimum cord length is required to be 1,5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5,3 mm2).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes,		N/A
	- rated 125 percent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	First column of Table 3E revised to require “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”		N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A,		N/A
	or if the motor has a nominal voltage rating greater than 120 V,		N/A
	or is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
4.3.13.5.1	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.		N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
4.7	For computer room applications, automated information storage systems with combustible media greater than 0,76 m3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0,9 m2 (10 sq ft) or a single dimension greater than 1,8 m (6 ft) are required to have a flame spread rating of 50 or less.		N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.		N/A
Other National Differences			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	The components fulfil the requirements of the standard and in addition P1 and P2 of UL60950 and CSA 22.2-60950 was applied.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply.		N/A
	This maximum operating voltage shall include consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092)		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded.		N/A
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
Annex EE	Articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A
GENERAL	All warnings should be in French language.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
ISRAEL-Differences to IEC 60950-1:2005 (2011-03-02)			
ISRAEL STANDARD SI 60950 PART 1 **INFORMATION TECHNOLOGY EQUIPMENT - SAFETY: GENERAL REQUIREMENTS** **TRANSLATION OF ISRAEL NATIONAL DEVIATIONS ONLY**			
1.	**Scope (with national deviations)**		—
1.1.1	**Equipment covered by this Standard** This Standard is applicable to mains-powered or battery-powered information technology equipment, including electrical business equipment and associated equipment, with a rated voltage not exceeding 600 V. This Standard is also applicable to the information technology equipment mentioned below: - equipment designed for use as telecommunication terminal equipment and telecommunication network infrastructure equipment, independent of the source of power; - equipment designed and intended to be connected directly to, or used as infrastructure equipment in, a cable distribution system, independent of the source of power; - equipment designed to use the general a.c. mains supply as a communication transmission medium (see clause 6, Note 4 and subclause 7.1, Note 4). This Standard is also applicable to components and subassemblies intended for incorporation in information technology equipment. It is not expected that such components and subassemblies comply with every aspect of the Standard, provided that the complete information technology equipment, incorporating such components and subassemblies, does comply. **Note** 1: Examples of aspects with which uninstalled components and subassemblies may not comply include the marking of the power rating and access to hazardous parts. **Note** 2: This Standard may be applied to the electronic parts of equipment even if that equipment does not wholly fall within its Scope, such as large-scale air conditioning systems, fire detection systems and fire extinguishing systems. Different requirements may be necessary for some applications. This Standard specifies requirements intended to reduce risks of fire ignition, electric shock or bodily injury for the operator and layman who may come into contact with the equipment and, where specifically stated, for a service person. This Standard is intended to reduce such risks with respect to installed equipment, whether it consists of a system or interconnected units or independent units, subject to installing, operating and maintaining the equipment in the manner prescribed by the manufacturer. Examples of equipment that is in the scope of this Standard are the following:		—

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
			—

Generic product type	Specific examples of generic type
Banking equipment	Monetary processing machines (counting, dispensing, etc.) for bills and coins, including automated teller machines (ATM)
Data and text processing machines and associated equipment	Data preparation equipment, data processing equipment, data storage equipment, personal computers, plotters, printers, scanners, text processing equipment and visual display units
Data network equipment	Bridges, data circuit terminating equipment, data terminal equipment and routers
Electrical and electronic retail equipment	Cash registers, point of sale terminals including associated electronic scales
Electrical and electronic office machines	Calculators, copying machines(A), dictation equipment, document shredding machines, duplicators, erasers, micrographic office equipment, motor-operated files, paper trimmers (punchers, cutting machines, separators), paper jogging machines, pencil sharpeners, staplers and typewriters
Other information technology equipment	Photoprinting equipment, public information terminals and multimedia equipment
Postage equipment	Mail processing machines and postage machines
Telecommunication network infrastructure equipment	Billing equipment, multiplexers, network powering equipment, network terminating equipment, radio base stations, repeaters, transmission equipment and telecommunication switching equipment
Telecommunication terminal equipment	Facsimile equipment, key telephone systems, modems, PABXs(B), pagers, telephone answering machines and telephone sets (wired and wireless)

(A) Commonly known as "copiers".
(B) PABX - Private Automatic Branch Exchange.

Note 3:

The requirements of Israel Standard SI 60065(C) may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment.

The list of equipment (brought in the above table) is not intended to be comprehensive and exhaustive, and equipment that is not listed is not necessarily excluded from the Scope, Equipment complying with the relevant requirements in this Standard is considered suitable for use with process control equipment, automatic test equipment and similar systems requiring information processing facilities. However, this Standard does not include requirements for performance or functional characteristics of equipment.

(C) In preparation

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.1.2	**Additional requirements** Requirements additional to those specified in this Standard may be necessary for: - equipment intended for operation in special environments (for example, extremes of temperature; very high concentration of dust, moisture or vibration; flammable gases; and corrosive or explosive atmospheres); - electromedical applications with physical connections to the patient; - equipment intended to be used in vehicles, on board ships or aircraft, in tropical countries, or at altitudes greater than 2,000 m. - equipment intended for use where ingress of water may be possible. For guidance on such requirements and on relevant testing, see Annex T. **Note:** Attention is drawn to the fact that government authorities of some countries impose additional requirements.		N/A
1.1.3	**Exclusions** This Standard does not apply to: - power supply systems which are not an integral part of the equipment, such as motor-generator sets, battery backup systems and transformers; - building installation wiring; - devices requiring no electric power.		—
National deviations to the clauses of the International Standard			
1.6	**Power interface** The clause is applicable with the following addition:		N/A
1.6.1	**AC Power distribution systems** A note shall be added to the clause as follows: **Note:** In Israel, this clause is applicable subject to the Electricity Law, 1954, its regulations and revisions.		N/A
1.7	**Marking and instructions** The clause is applicable with the following additions: - Subclause 1.7.201 shall be added at the beginning of the clause as follows:		N/A
1.7.201	**Marking in the Hebrew language** The marking in the Hebrew language shall be in		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	accordance with the Consumer Protection Order (Marking of goods), 1983. In addition to the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language. The details shall be marked on the apparatus or on its package, or on a label properly attached to the apparatus or on the package, by bonding or sewing, in a manner that the label cannot be easily removed. 1. Name of the apparatus and it commercial designation; 2. Manufacturer's name and address. If the apparatus is imported, the importer's name and address; 3. Manufacturer's registered trademark, if any; 4. Name of the model and serial number, if any; **5.** Country of manufacture.		
1.7.2	**Safety instructions and marking**		N/A
1.7.2.1	**General** The following shall be added to the clause: All the instructions and warnings related to safety shall also be written in the Hebrew language. - At the end of clause 1, clause 1.201 shall be added as follows:		N/A
1.201	**Power Consumption in standby mode** The equipment shall comply with the requirements of the Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with a permitted deviation of up to 10%		N/A
2.	**Protection from hazards** The clause is applicable with the following additions:		N/A
2.9.4	**Separation from hazardous voltages** The following shall be added at the beginning of the clause: In Israel, according to the Electricity Law, 1954, and the Electricity Regulations (Earthing and means of protection against electricity of voltages up to 1,000V) 1991, seven means of protection against electrocution are permitted, as follows: 1. TN-S - Network system earthing; TN-C-S -		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	Network system earthing; 2. TT - Network system earthing; 3. IT - Network Insulation Terre; 4. Isolated transformer; 5. Safety extra low voltage (SELV or ELV); 6. Residual current circuit breaker (30 ma = IΔ); **7.** Reinforced insulation; Double insulation (class II) ⧈ . Clause 2.201 shall be added at the end of the clause, as follows:		
2.201	**Prevention of electromagnetic interference** **-** Prior to carrying out the tests in accordance with the clauses of this Standard, the compliance of the apparatus with the relevant requirements specified in the appropriate part of the Standard series, SI 961, shall be checked. The apparatus shall meet the requirements in the appropriate part of the Standard series, SI 961. - If there are components in the apparatus for the prevention of electromagnetic interference, these components shall not reduce the safety level of the apparatus as required by this Standard.		N/A
3.	**Wiring, connections and supply** The clause is applicable with the following additions:		N/A
3.2	**Connection to a mains supply**		N/A
3.2.1	**Means of connection**		N/A
3.2.1.1	**Connection to an a.c. mains supply** After the note, the following note shall be added: **Note:** In Israel, the feed plug shall comply with the requirements of Israel Standard SI 32 Part 1.1.		N/A
3.2.1.2	**Connection to a d.c. mains supply** At the end of the first paragraph, the following note shall be added: **Note:** At the time of issue of this Standard, there is no Israel Standard for connection accessories to d.c.		—

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
Annex P	**ANNEX P** **(normative) Normative references** The annex is applicable with the following national deviations: - The following Israel Standards have been inserted in place of some of the International Standards specified in this annex of the Standard, as follows:		N/A

The referenced International Standard	The substituted Israel Standard	Comments
IEC 60065: 2001	SI 250(A) - Safety requirements for mains operated electronic and related apparatus for household and similar general use	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 65:1985, including its amendments
IEC 60083	SI 32 Part 1.1 (a) – Plugs and socket-outlets for household and similar purposes: Plugs and socket-outlets for single phase up to 16A – General requirements national modifications and	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Standard, IEC 60884-1 – Third edition:2002-06
IEC 60227 (all parts)	SI 473, all parts - Cables, cords and insulated conductors for nominal voltage up to 1000 volt	The Israeli Standard, excluding national modifications and additions noted, is identical to the I Standard series, IEC 60227 (all parts)
IEC 60245 (all parts)	SI 60245 Part 1 – Rubber insulated cables – Rated voltages up to and including 450/750 V	The Israeli Standard series, excluding national modifications and additions noted, is identical to the Standard series, IEC 60245 (all parts)
IEC 60309 (all parts)	SI 1109, all parts - Plugs, socket-outlets and couplers for industrial purposes	SI 1109, part 1 and part 2, excluding national deviations in them, are identical to the Standards of the International Electrotechnical Commission IEC 60309-1-1999 and IEC 60309-2-1999, respectively.
IEC 60317 (all parts)	SI 1067 Part 1 – Enamelled round copper wires with high mechanical properties	The Israel Standard is identical to the Standard of the International Electrotechnical Commission IEC 317-1 (1980)
	SI 1067 Part 2 - Self-fluxing enamelled(B) round copper wires	The Israel Standard is identical to the Standard of the International Electrotechnical Commission IEC 317-4 (1980)
	SI 1067 Part 3 – Enamelled round copper wires with a temperature index of 180°C	The Israel Standard is identical to the Standard of the International Electrotechnical Commission IEC 317-8 (1980)
IEC 60320 (all parts)	SI 60320 Part 1 - Appliance couplers for household and similar general purposes: General requirements	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC

IEC 60950-1/Am1				
Clause	Difference – Test		Result – Remark	Verdict
			60320-1 (2001)	
		SI 60320 Part 2.1 - Appliance couplers for household and similar general purposes: Sewing machine couplers	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60320-2.1 (2000)	
		SI 60320 Part 2.2 - Appliance couplers for household and similar general purposes: Interconnection couplers for household and similar equipment	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60320-2.2 (1998)	
		SI 60320 Part 2.3 -Appliance couplers for household and similar general purposes: Interconnection couplers for household and similar equipment Appliance coupler for household and similar general purposes: Appliance coupler with a degree of protection higher than IPX0	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60320-2.3 (1998)	
	IEC 60364-1:2001	Electricity Law, 1954, with its Regulations and updates	-	
	IEC 60730-1: 1999 Amendment 1 (2003)	SI 60730 Part 1 - Automatic electrical controls for household and similar use: General requirements	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60730-1 Edition 3.2:2007-03.	
	IEC 60825-1	SI 60825 Part 1 - Safety of laser products: Equipment classification, requirements and user's guide	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60825-1 2nd Edition:2007-03	
	IEC 60947-1; 2004	SI 60947 Part 1 -Low-voltage switchgear and controlgear: General rules	The Israel Standard, excluding national modifications and additions noted, is identical to Standard of the International Electrotechnical Commission, IEC 60947-1Edition 5.0:2007-06.	
	IEC 61058-1: 2000	SI 61058 Part 1 - Switches for appliances: General requirements	The Israel Standard, excluding national modifications and additions noted, is identical to the Standard of the International Electrotechnical Commission, IEC 61058-1 Edition 3.1:2001:	
	ISO 3864 (all parts)	SI 3864 Part 1 -Graphical symbols	The Israel Standard, excluding national modifications and additions noted, is identical to the Standard of the International Electrotechnical Commission IEC 3864-1 (First Edition:2002-05-15	
	Notes:			

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	(a) The standard is being revised (b) In the International Standard series, there are parts not yet adopted as Israeli Standards. This table notes the relevant Israeli Standards, and in the Comments column, the corresponding parts of the International Standard series. (c) Not relevant to the translation.		N/A
The following shall be added to the annex: Israeli Standards SI 961 (all parts) – Electromagnetic compatibility Israeli Laws, Regulations and documents Electricity Law, 1954, with its Regulations and updates Consumer Protection Order (Marking of goods), 1983, Kovetz HaTakanot 4465 dated 1983-02-24 Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011			N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
CHINA-Differences to IEC 60950-1:2005 (ed. 2) (2013-09-26) (GB4943.1-2011 Information technology equipment – Safety – Part 1: General requirements)			
1.1.2	Revise the third dashed paragraph as: —equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	Considered. Unit falls within the scope of the standard.	P
1.4.5	At the end of the third dashed paragraph ,added following paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. Delete the contents which behind the first dash.	Tolerances +10%, -10% considered.	P
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. And note 1: for equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: for equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are considered.	Manufacturer specifies ambient temperature >35°C.	P
1.5.2	Add a note behind the first dash : A component used shall comply with related requirements corresponding altitude of 5000m.		N/A
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.		P
1.7.1	Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V(three-phases)when manufactured. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	The rated voltage range and frequency range is covering China mains voltage 220V/50Hz.	P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.7.2.1	Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  If only symbol used, the explanation of the symbol shall be contained in the instruction manual. For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.	Appropriate labels must be attached to the units shipped to China.	N/A
2.7.1	Amended as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3. Delete note of Clause 2.7.1.	Unit provides appropriate internal protection.	P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
2.9 2.9.	Humidity conditioning This section applies for equipment to be operated at tropical climatic conditions, humidity conditioning dealt with tropical climatic conditions. For equipment not to be operated at tropical climatic conditions, its humidity conditioning complies with rules of CTL 624/07. First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40±2℃ and a relative humidity of (93±3)%. During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3)%. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value t between 20 °C and 30 °C such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.	Unit not intended for tropical conditions. Appropriate label required for products shipped to china.	N/A
2.10.3.1	Change the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T 16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T 16935.1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Unit verified for altitude <5000m.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T 16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T 16935.1. Add "(apply for up to 2000m)" in header of Table 2K, 2L and 2M.	Unit not intended to be used at an altitude of 5000m or more. Manufacturer specified maximum altitude of 2000m.	N/A
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.		N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.	No CRT used.	N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35°C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.	No linear transformer used.	N/A
Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment. A component that has been demonstrated to comply with National Industry standards or the relevant national standard shall be subjected to the applicable tests of this standard as part of the equipment.	Unit specified for altitude up to 2000m.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.	Considered.	--
Annex DD (normative)	Added annex DD: Instructions of the new safety warning labels.	Must be verified during national approval.	N/A
Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.	Considered.	P
Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;	Considered.	P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005.		

Country	Japan
IECEE Member NCB	IECEE-JP
IEC Standard	IEC 60950-1:2005 + Amd. 1:2009 + Amd. 2:2013
Corresponding National Standard	J60950-1 (H29)
Regulatory Requirements	Electrical Appliances and Materials Safety Act Article 8, 9 and Appendix 12

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
1.2.4.1	Add the following new notes. Note: Even if the equipment is designed as Class I, the equipment is regarded as CLASS 0I EQUIPMENT (see 1.2.4.3A) when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.	Equipment is rated class I with separate earth connection.	N/A

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
1.2.4.3A	Add the following new clause. 1.2.4.3A CLASS 0I EQUIPMENT Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by: - using BASIC INSULATION, and - providing either of the following a) or b) in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring. a) Provision of 2-pin plug with earthing lead including the condition of that 2-pin adaptor with earthing lead wire is provided or recommended. b) Provision of an independent earthing terminal, when 2-core mains cord (without earthing conductor) is used. Note – CLASS 0I EQUIPMENT may have a part constructed with Double Insulation or Reinforced Insulation.	Equipment is rated class I.	N/A
1.3.2	Add the following notes after the first paragraph: Note 1 Transportable or similar equipment that are relocated frequently for intended usage should not be designed as Class I or CLASS 0I EQUIPMENT unless it is intended to be installed by service personnel. Note 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or CLASS 0I EQUIPMENT unless it is intended to be installed by service personnel.		N/A

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
1.5.1	Replace the first paragraph with the follows: Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standard, or IEC component standards, or components shall have equivalent to or better properties than these. Replace Note 1 with the following: Note 1 Components complying with the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance. Note 2 JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope. Add the following after the last paragraph: For an appliance connector that is able to fit with appliance inlet compatible with the standard sheet of IEC 60320-1 or JIS C 8283-1, the size of the connector shall comply with relevant standard sheet of IEC 60320-1 or JIS C 8283-1. A power supply cord set complying with JIS C 8286 is regarded to comply with this requirement. Note 3 A power supply cord set provided with appliance connector that is able to fit with appliance inlet compatible with the standard sheet of IEC 60320-1 or JIS C 8283-1 should comply with JIS C 8286.	IEC/UL approved materials are used.	P
1.5.2	Add the following Note 2 after the 4th dashed paragraph: Note 2 See 1.7.5A when Type C.14 appliance coupler rated 10 A per JIS C 8283-1 is used with an equipment rated not more than 125 V and rated more than 10 A.		N/A
1.5.5	Add the following Note after the last paragraph: NOTE An interconnection cord sets provided with interconnecting coupler for mains supply complying with JIS C 8283-2-2 should comply with JIS C 8286.	No power supply cord set provided.	N/A
1.5.9.1	Add the following in the last of NOTE 1. Gas discharge tube connected in series with VDR may be used.	Considered.	—

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
1.7	Replace EE.2 and EE.4 with the following: JA.1 Shredder warning JA.3 Shredder power disconnection	No such equipment.	N/A
1.7.1.2	Replace first and second dashed paragraphs with the followings: - manufacturer's or responsible company's name or trade-mark or identification mark; - manufacturer's or responsible company's model identification or type reference;	Manufacturer's TM and manufacturer's type reference provided.	P
1.7.2.1	Add the following after the second paragraph. Instruction or equipment marking regarding safety shall be written in Japanese unless otherwise permitted in this standard.	Has to be checked during national approval.	N/A
1.7.2.5	Replace the last sentence with the following: An acceptable marking for an electric shock hazard is  (6.2.4 of JIS S 0101).	No such warning symbol provided.	N/A
1.7.5	Replace the second paragraph with the following. Socket-outlets conforming to JISC8282-1 are examples of standard power supply outlets.	No socket outlet provided.	N/A

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
1.7.5A	Add the following new clause after 1.7.5. 1.7.5A Power supply cord set If appliance coupler according to IEC60320-1, C.14(rated current: 10A) is used in equipment whose rated voltage is less than 125V and rated current is over 10A, the following instruction or equivalent shall be described in the operating instruction. “ Use only designated cord set attached in this equipment” Example in Japanese: “この機器に同こん(梱)した指定の電源コードセットだけを使用して下さい。” If appliance coupler is used for connection to the mains and if the cord set is not provided within the package for the equipment, suitable information regarding to the cord set shall be described in the operating instruction Note Since the combination of appliance inlet with earthing pin and two-core cord set (without earthing conductor) is special, the cord set should be attached in the equipment and the operating instruction should provide the information that the cord set is exclusively used with the equipment and not allowed to use with other equipment.		N/A

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
1.7.14A	Add the following new clause after 1.7.14. 1.7.14A Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following or equivalent instructions shall be marked. - the following instruction shall be marked on the mains plug or on the visible place of the main body “Provide an earthing connection” Example in Japanese: “必ず接地接続を行ってください。” - the following instruction shall be marked on the visible place of 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.” Example in Japanese: 接地接続は必ず，電源プラグを電源につなぐ前に行ってください。 また，接地接続を外す場合は，必ず電源プラグを電源から切り離してから行ってください。	Not class 0I Equipment.	N/A
1.7.14B	Add the following new clause after 1.7.14A 1.7.14B Protective earthing conductor used for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment, the suitable information for the protective earthing connection shall be provided in the operating instruction. (See 2.6.3.2)	Not class 0I Equipment.	N/A

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
2.1.1.1	Replace item b) of 2.1.1.1with the following. b) A test with the test finger, Figure 2A, which shall not contact parts described above when applied to openings in the ENCLOSURES after removal of parts that can be detached by an OPERATOR, including fuseholders, and with OPERATOR access doors and covers open. It is permitted to leave lamps in place for this test. Connectors that can be separated by an OPERATOR, other than those complying with JIS C 8303 or JIS C 8285 or IEC 60309 series or JIS C 8283 series or IEC 60320 series, shall also be tested during disconnection. But even if the connector does not comply with these standards, the one having equivalent to or better performance need not be tested during disconnection. Note 4 Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.	Considered.	—
2.5	Replace “IEC 60730-1” with “JIS C 9730-1” (in item b)).	No such limiting device incorporated.	N/A
2.6.2	Delete the following line. • the symbol  ,IEC 60417-5018 (2011-07);		N/A
2.6.3.2	Add the following after the first paragraph. However where the single core conductor is used for protective earthing lead or earthing cord for CLASS 0I EQUIPMENT, either of the following condition shall be met. - Use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having equivalent to or more strength and thickness. - Single core cord or single core cabtire cable with 1.25 mm2 or more cross-sectional area	Not class 0I Equipment.	N/A
2.6.3.5	Add the following after the first paragraph. However this requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.	Internal conductor for eathing colored green-yellow.	P

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
2.6.4.2	Replace the first paragraph with the following. Equipment required to have protective earthing shall have a main protective earthing terminal. For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal. However, for CLASS 0I EQUIPMENT provided with the separate main protective earthing terminal other than appliance inlet, the separate main protective earthing terminal may be treated as mains protective earthing terminal.	Not CLASS 0I equipment.	N/A
2.6.5.4	Replace the first sentence with the following. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following: Add the following after last paragraph: Note For CLASS 0I EQUIPMENT,1.7.14A is applied instead of this requirement.		N/A
2.6.5.8A	Add the following new clause after 2.6.5.8 2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.	Not CLASS 0I equipment.	N/A
2.7.6	Replace “ISO 3864, No. 5036” with “6.2.4 of JIS S 0101”.	No double pole / neutral fusing provided.	N/A

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
2.10.3.1	Replace the 8th paragraph with the following The above minimum CLEARANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, or even if it does not comply with the above standards but the one having equivalent to or better performance and dimension which comply with JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2. Note Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A
2.10.3.2 Table 2J	In Japan, the value of the main power supply transient voltage for the nominal ac main power supply voltage of 100 V is determined by applying the row of AC main power supply voltage 150 V.	2500 V mains transient voltage considered.	P
2.10.4.3	Replace the 6th paragraph with the following The above minimum CREEPAGE DISTANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, or even if it does not comply with the above standards but the one having equivalent to or better performance and dimension which comply with JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2. Note Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A
2.10.9	Replace “1.4.5” in the third paragraph with “1.4.12”.	Considered	—
3.2.3	Add the following after the third paragraph. Table 3A applies when cables complying JIS C 3662 series of standards or JIS C 3663 series of standards are used. In case of other cables, cable entries shall be so designed that the cable could be fitted in a conduit.		N/A

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
3.2.4	Add the following as 4th dashed paragraph. - be so constructed that mechanical stress shall not transmit to the soldering part of inlet terminal during insertion or removal of the connector except that the body of the inlet is secured and is secured not only soldering.		N/A
3.2.5.1	Add the following after Note 3: Note 4 In Japan, mains cords having equivalent to or better electro-mechanical and fire safety performance as above and complying with Appendix 1 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance can be used. Replace the paragraph after Note 3 with the following. For equipment required to have protective earthing, a PROTECTIVE EARTHING CONDUCTOR shall be included in the MAINS SUPPLY cord except for CLASS 0I EQUIPMENT having separate protective earthing conductor from mains cord. Add the following after the second paragraph after Note 3: Note 5 For the cross-sectional area of mains cord described in Note 4, relevant Japanese wiring regulation can be applied.	Power supply cord is not provided.	N/A
3.2.5A	Add the following new clause after 3.2.5 3.2.5A AC mains plug Mains plug for PLUGGABLE EQUIPMENT TYPE A shall comply with JIS C 8282-1 or equivalent to or better performance. Power supply cord set complying with JIS C 8286 is regarded to meet the requirements. Mains plug with fuse link for PLUGGABLE EQUIPMENT TYPE A shall comply with JIS C 8282-2-1 or equivalent to or better performance. Note Mains plug complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A
3.3.4 Table 3D	Add the following note to Table 3D: Note For cables other than those complying with JIS C 3662 series of standards or JIS C 3663 series of standards, the terminals shall be suitable for the size of the intended cables.		N/A

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
3.3.7	Add the following after the first sentence: This requirement is not applicable to the external earthing terminal of CLASS 0I EQUIPMENT.	Not CLASS 0I equipment.	N/A
4.2.8	Add the following after the first paragraph: Note Intrinsically protected picture tube is required to comply with JIS C 6965 in clause 18 of JIS C 6065. No intrinsically protected picture tube which is out of scope of JIS C 6965 is required to test according to sub-clause 18.2 of JIS C 6065.		N/A
4.3.4	Add the following after the first sentence: This requirement also applies to those connections in CLASS 0I EQUIPMENT, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.	No loosening of parts impairing creepage distances or clearances over basic, insulation is likely to occur.	P
4.3.5	Replace the first dashed paragraph with the following. Within a manufacturer's unit or system, plugs and sockets likely to be used by the OPERATOR or by a SERVICE PERSON shall not be employed in a manner likely to create a hazard due to misconnection. In particular, connectors complying with IEC 60320/JIS C 8283 series of standards or JIS C 8303 or JIS C 8358 shall not be used for SELV CIRCUITS or TNV CIRCUITS. Keying, location or, in the case of connectors accessible only to a SERVICE PERSON, clear markings are permitted to meet the requirement.		N/A
4.3.6	Replace the 1st paragraph with the following DIRECT PLUG-IN EQUIPMENT shall not impose undue stress on the socket-outlet. The mains plug part shall comply with the standard for the relevant mains plug. (see 3.2.5A)		N/A
4.4.2	Replace the paragraph with the following: HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall also comply with Annex JA.	No such equipment.	N/A

<table>
<tr><th colspan="4">IEC 60950-1 – Japan National differences</th></tr>
<tr><td>Clause</td><td>Difference – Test</td><td>Result – Remark</td><td>Verdict</td></tr>
<tr><td>4.5.3</td><td>Add the following note to footnote b) of Table 4B:

NOTE In case no data for the material is available, Appendix 4, 1. (1). b. 3 of the Interpretation on the Ministerial Ordinance stipulating Technical Specifications for Electrical Appliances is regarded as maximum temperature limit of the material.</td><td>Separately approved materials used.</td><td>P</td></tr>
<tr><td>5.1.3</td><td>Add a note after the first paragraph as follows:

Note – Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, test is conducted using the test circuit from IEC 60990, figure 13.</td><td>1) Single phase equipment.
2) 3 phase equipment not intended for connections to Delta mains.</td><td></td></tr>
<tr><td>5.1.6</td><td>Replace Table 5A. as follows
<table>
<tr><th>Type of equipment</th><th>Terminal A of measuring instrument connected to:</th><th>Maximum TOUCH CURRENT mA r.m.s. [a]</th><th>Maximum PROTECTIVE CONDUCTOR CURRENT</th></tr>
<tr><td>ALL equipment</td><td>Accessible parts and circuits not connected to protective earth [b]</td><td>0,25</td><td>-</td></tr>
<tr><td>HAND-HELD</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>0,75</td><td>-</td></tr>
<tr><td></td><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>0,5</td><td>-</td></tr>
<tr><td>MOVABLE (other than HAND_HELD, but including TRANSPORTABLE EQUIPMENT)</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3,5</td><td>-</td></tr>
<tr><td></td><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1.0</td><td>-</td></tr>
<tr><td>STATIONARY, PLUGGABLE TYPE A</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3,5</td><td>-</td></tr>
<tr><td></td><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1,0</td><td>-</td></tr>
<tr><td>ALL other STATIONARY EQUIPMENT</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3.5
-</td><td>-
5 % of input current</td></tr>
<tr><td>- not subject to the conditions of 5.1.7
- subject to the conditions of 5.1.7</td><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1.0
-</td><td>-
-</td></tr>
<tr><td colspan="4">a If peak values of TOUCH CURRENT are measured, the maximum values are obtained by multiplying the r.m.s.values in the table by 1,414.
b Some unearthed accessible parts are covered in 1.5.6 and 1.5.7 and the requirements of 2.4 apply. These may be different from those in 5.1.6.</td></tr>
</table></td><td>Considered.</td><td>P</td></tr>
<tr><td>Annex G</td><td>Replace the paragraph before Table G.2 with the following

The above minimum CLEARANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, and 1.5.1 of this standard in which dimension is comply with JIS C 8283 series, JIS C 8303 or IEC 60309-2.</td><td>1) SELV and TNV connectors do not comply with IEC 60320 or IEC 60083.
2) Secondary Connectors do not comply with IEC60320 or IEC60083 or IEC60309 connectors.</td><td>N/A</td></tr>
<tr><td>Annex V
V.1</td><td>Replace “3.1.2”in the first line of V.1 with “312” in the first line.</td><td>Considered.</td><td>—</td></tr>
</table>

IEC 60950-1 – Japan National differences			
Clause	Difference – Test	Result – Remark	Verdict
Annex W W.1	Replace the third sentence in the first paragraph with the following: Floating circuits can exist in CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and earthed circuits can exist in CLASS II EQUIPMENT.	Touch current was not exceeded.	N/A
Annex BB	This annex is not applicable.		—
Annex CC CC.2	Replace the third dashed paragraph with the following: - 10 000 cycles of turning enable on and off with the input connected to a capacitor rated 425 uF ± 10 uF and shorting the output;	No such limiting device provided.	N/A
CC.3	Add note at end of CC.3: Note: The fast blow fuse should be the one complying with JIS C 6575-2.		N/A

Enclosure No. 1a

European Group Differences and National Differences according to EN 60950-1:2006 + A1:2010 + A2:2013 + A11:2009 + A12:2011

(21 pages including this cover page)

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

Differences according to ..... :	EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
Attachment Form No..... :	EU_GD_IEC60950_1F
Attachment Originator..... :	SGS Fimko Ltd
Master Attachment..... :	Date 2014-02

EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it´s amendmets are prefixed “Z”		P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2; 1.5.1 Note 2 & 3; 1.5.7.1 Note 1.5.8 Note 2; 1.5.9.4 Note; 1.7.2.1 Note 4, 5 & 6 2.2.3 Note; 2.2.4 Note; 2.3.2 Note 2.3.2.1 Note 2; 2.3.4 Note 2; 2.6.3.3 Note 2 & 3 2.7.1 Note; 2.10.3.2 Note 2; 2.10.5.13 Note 3 3.2.1.1 Note; 3.2.4 Note 3.; 2.5.1 Note 2 4.3.6 Note 1 & 2; 4.7 Note 4; 4.7.2.2 Note 4.7.3.1Note 2; 5.1.7.1 Note 3 & 4; 5.3.7 Note 1 6 Note 2 & 5; 6.1.2.1 Note 2; 6.1.2.2 Note 6.2.2 Note; 6.2.2.1 Note 2; 6.2.2.2 Note 7.1 Note 3; 7.2 Note; 7.3 Note 1 & 2 G.2.1 Note 2; Annex H Note 2		P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note; 6.1.2.1 Note 2 6.2.2.1 Note 2; EE.3 Note		P

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	**Replace** the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		N/A
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	No headphones or earphones provided.	N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		N/A
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *		N/A
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: – hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.	Switch mode power supply. No provisions for playing music provided.	N/A
	– analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: □□equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and □□a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: □□□the symbol of Figure 1 with a minimum height of 5 mm; and □□□the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."  **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: □□with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and □□respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and □□with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	Unit provides appropriate internal protection.	N/A
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Protection does not rely on building installation. Unit provides appropriate internal protection.	N/A
2.7.2	This subclause has been declared ‘void’.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A
3.2.5.1	Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F2”. In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 a) | Over 6 up to and including 10| (0,75) b) 1,0 | Over 10 up to and including 16| (1,0) c) 1,5 | In the conditions applicable to Table 3B delete the words “in some countries” in condition a). In NOTE 1, applicable to Table 3B, delete the second sentence.	No power supply cord provided.	N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD	Considered.	P

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A	No terminals provided.	N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).	EUT does not produce radiation.	N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	EUT does not produce radiation.	N/A
Bibliography	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	No plug provided.	N/A
1.2.13.14 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.	Equipment not intended for connection to cable distribution systems	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.1 (A11:2009)	In **Finland, Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	No resistors bridging basic insulation.	N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		P
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
1.7.2.1 (A11:2009)	In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”		

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”		N/A
1.7.2.1 (A2:2013)	In **Denmark**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in **Denmark** shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”		N/A
1.7.5 1.7.5 (A11:2009)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	No socket outlet provided.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c	No socket outlet provided.	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuit.	N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	Considered.	P
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	Unit provides appropriate internal protection.	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuit.	N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A	No power supply cord provided.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A		
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	No power supply cord provided.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1 (A2:2013)	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c	No power supply cord provided.	N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	No power supply cord provided.	N/A
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	No power supply cord provided.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	No power supply cord provided.	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	No power supply cord provided.	N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	No power supply cord provided.	N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Measured touch current was less than 3,5 mA.	P
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	Equipment not intended for connection to telecommunication networks.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	Equipment not intended for connection to cable distribution systems	N/A
7.3 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

Annex ZD
(informative)

IEC and CENELEC code designations for flexible cords

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60277 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H

Clause	Requirement	Verdict
Denmark national differences (2013-07-04) **National standard: DS/EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013**		
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N/A
1.7.5	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	N/A
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	N/A

Clause	Requirement	Verdict
Sweden national differences (2013-06-25) **National standard: SS-EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011**		
Various	Please see the EN version of the standard where the Swedish National and Special National Deviations are stated.	P

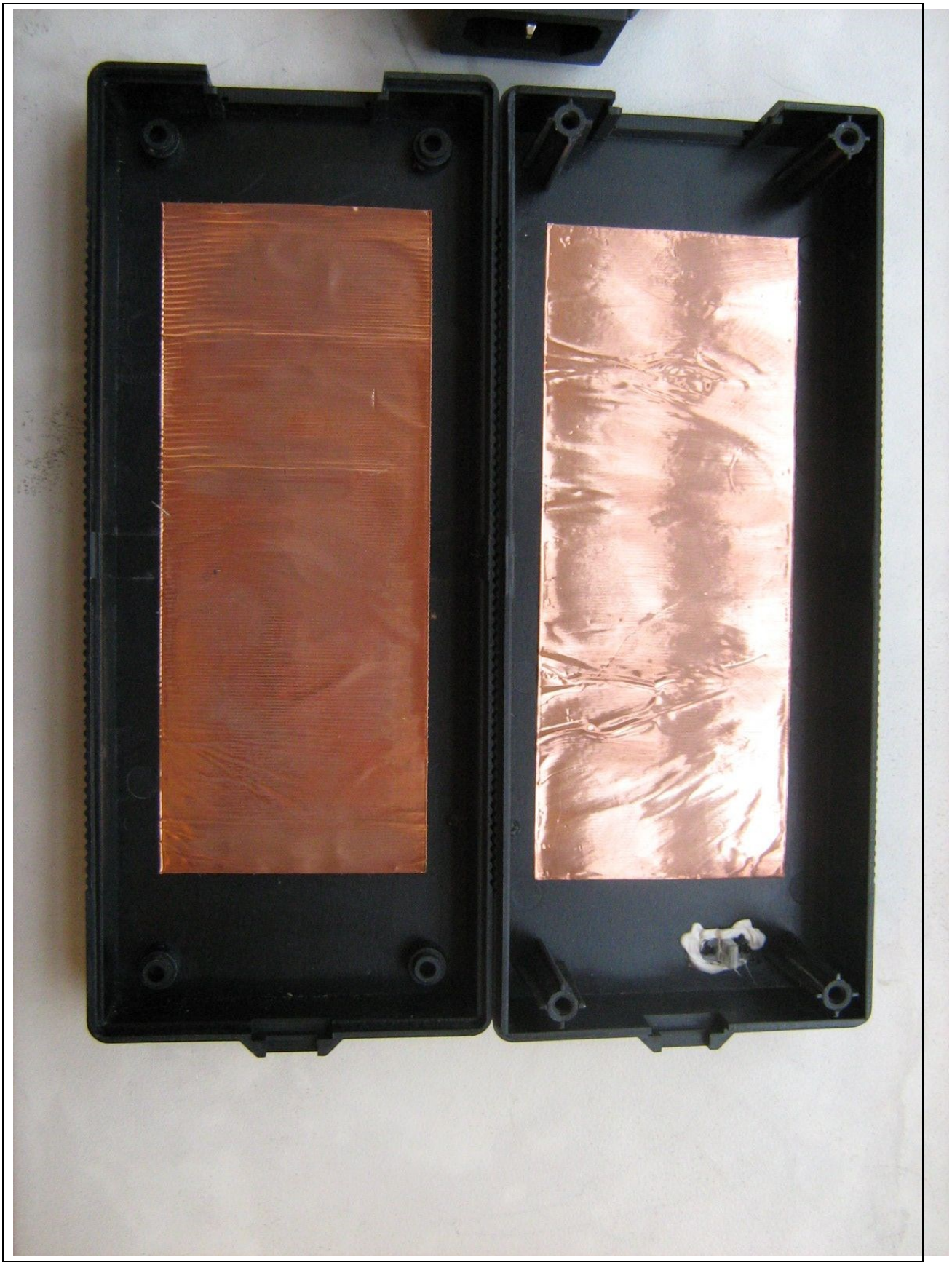
Enclosure No. 2

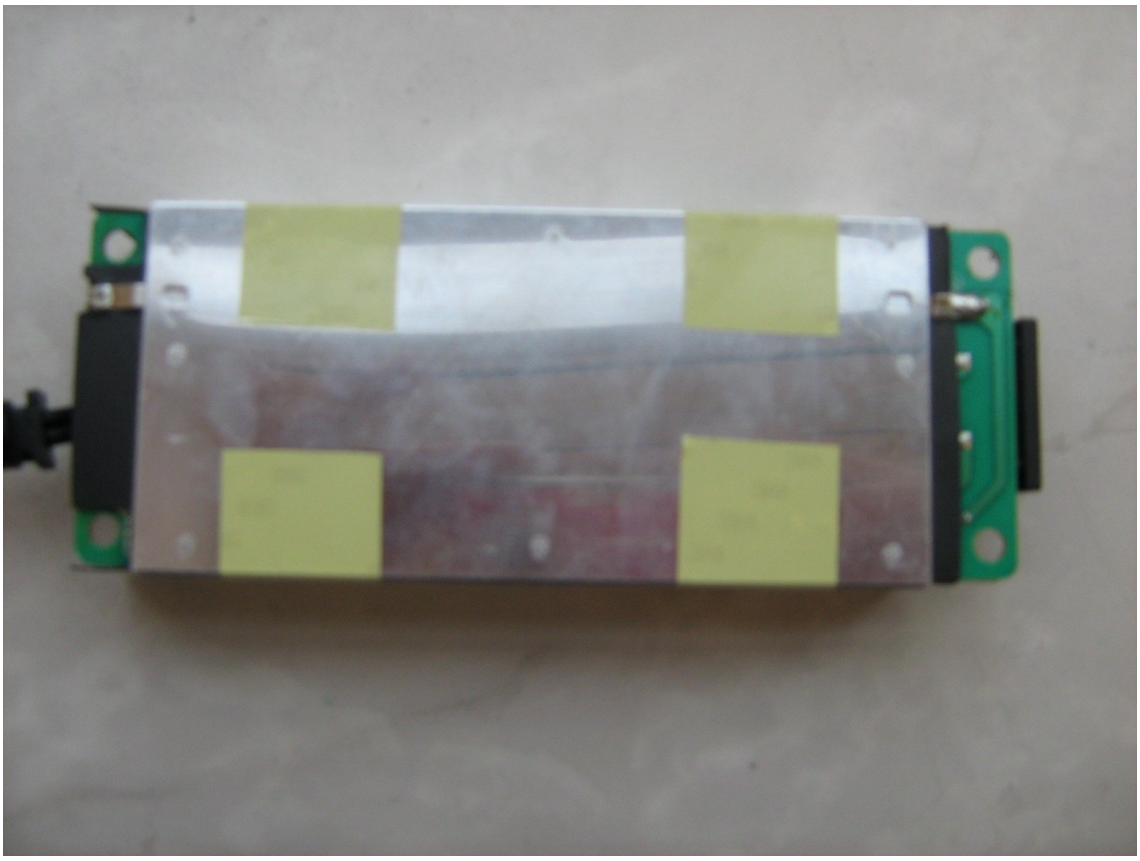
Pictures of the unit

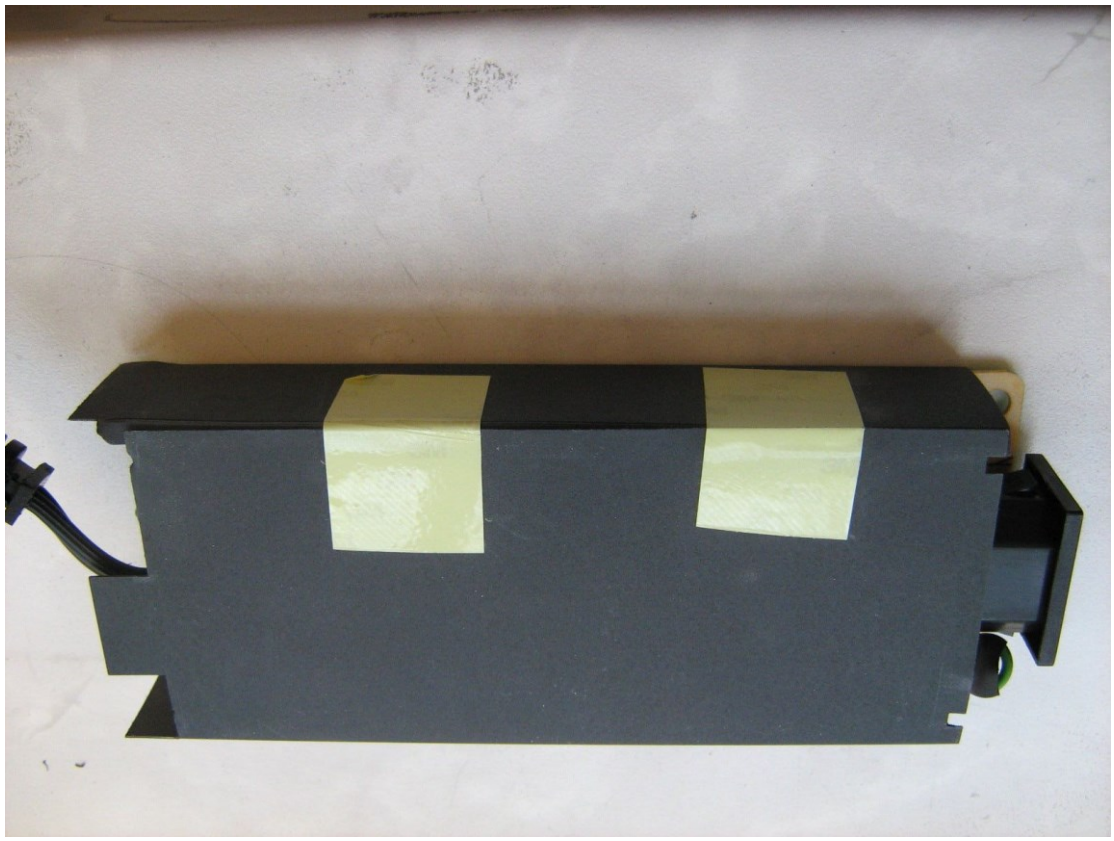
(8 pages including this cover page)

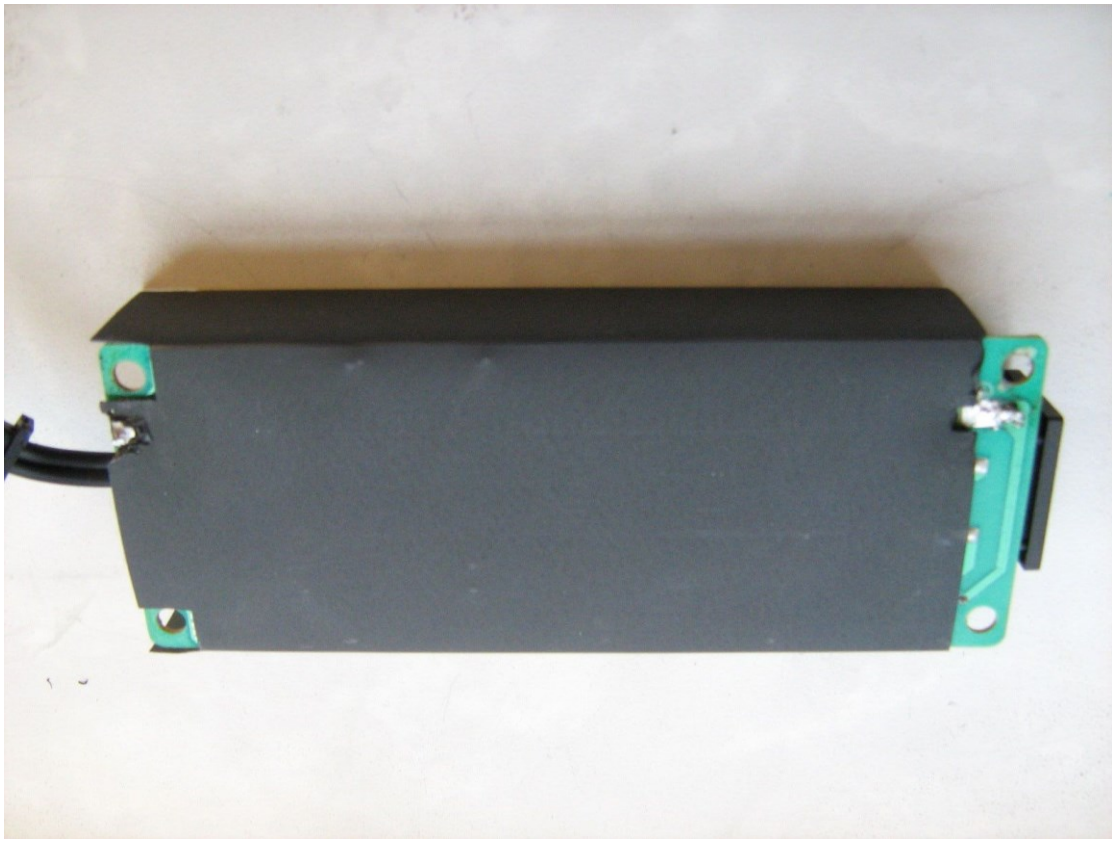

GlobTek, Inc.

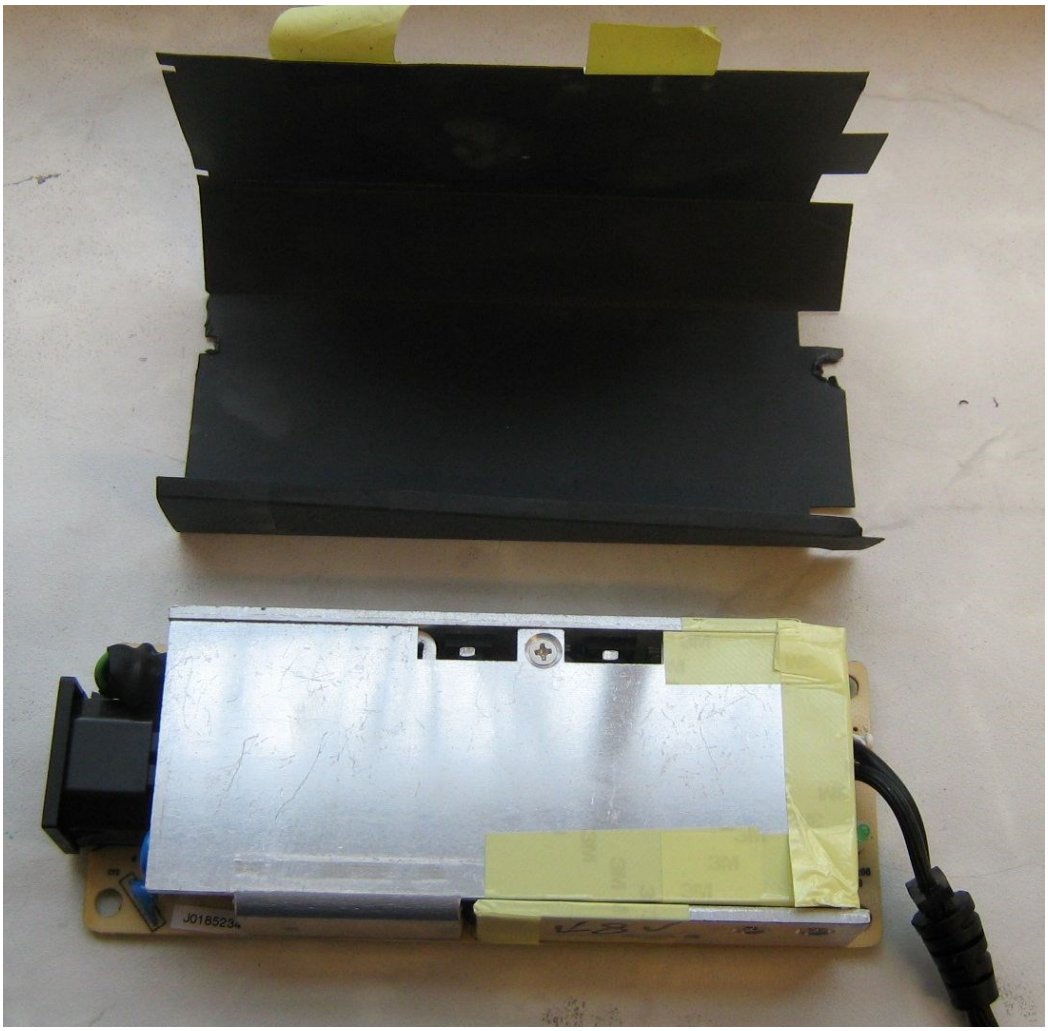

GlobTek, Inc.
ITE POWER SUPPLY
PART NO.(料号): TR9CE2500LCP-NCR
MODEL (型号): GTA41077P12048
INPUT (输入): 100-240V~50/60 Hz 1.8A
OUTPUT (输出): 48V ⎓ 2.5A
CAUTION: INDOOR USE ONLY!
ENERGY EFFICIENCY LEVEL
RoHS
MADE IN CHINA

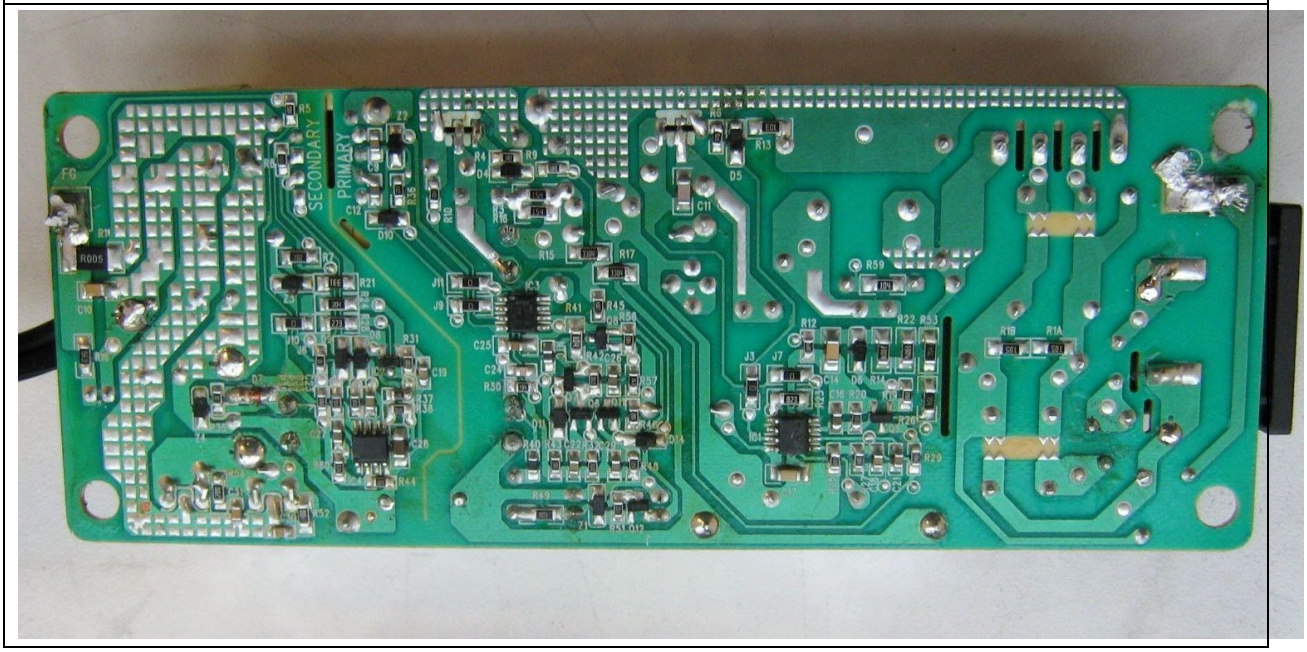


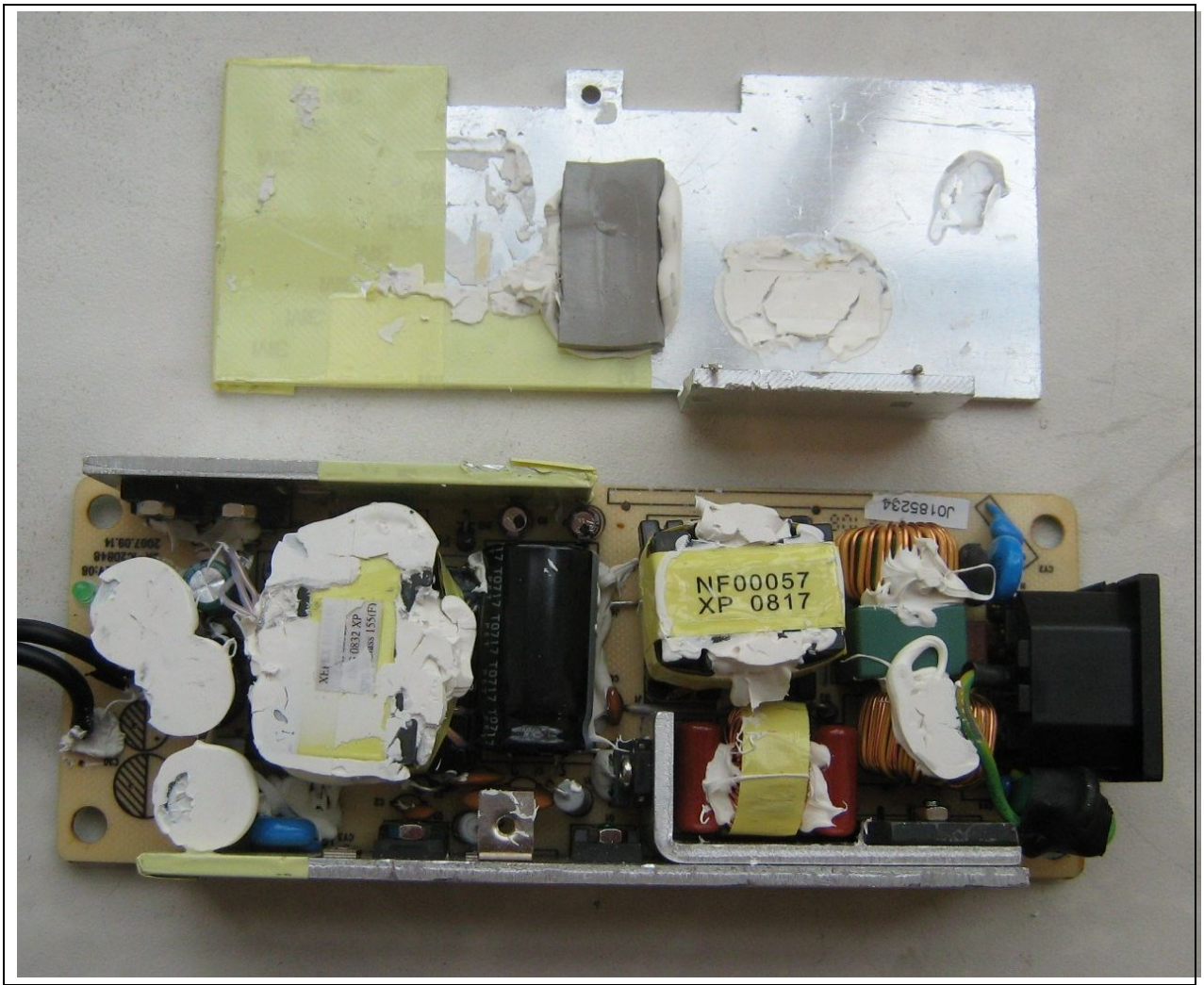









PRIMARY
SECONDARY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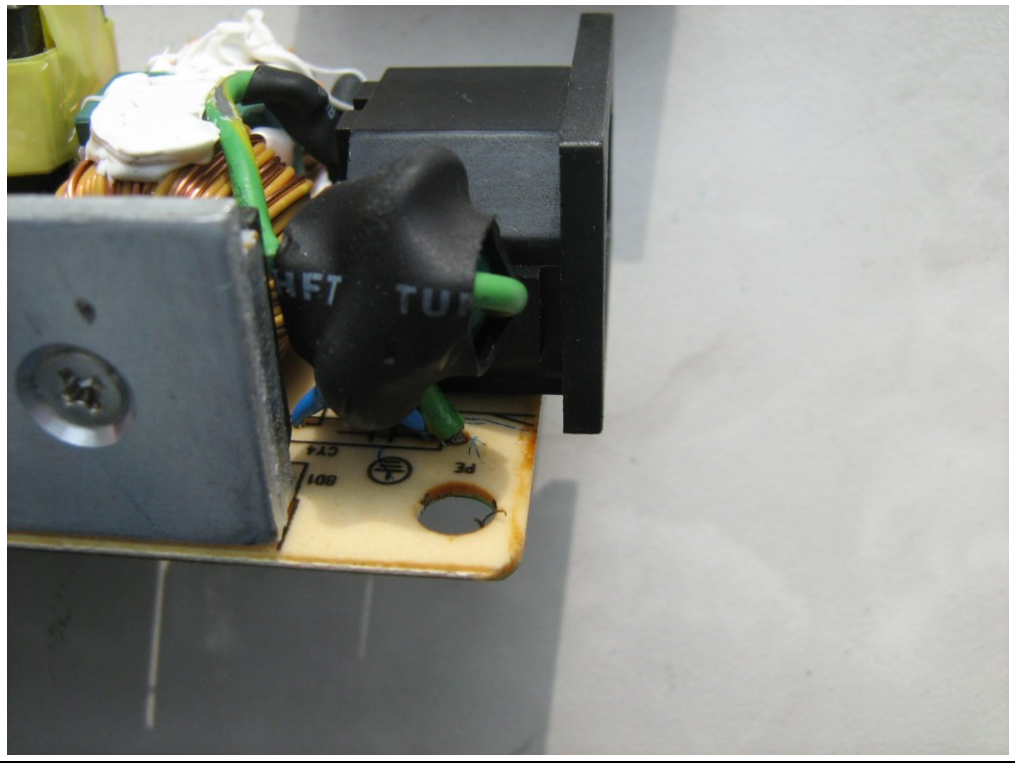
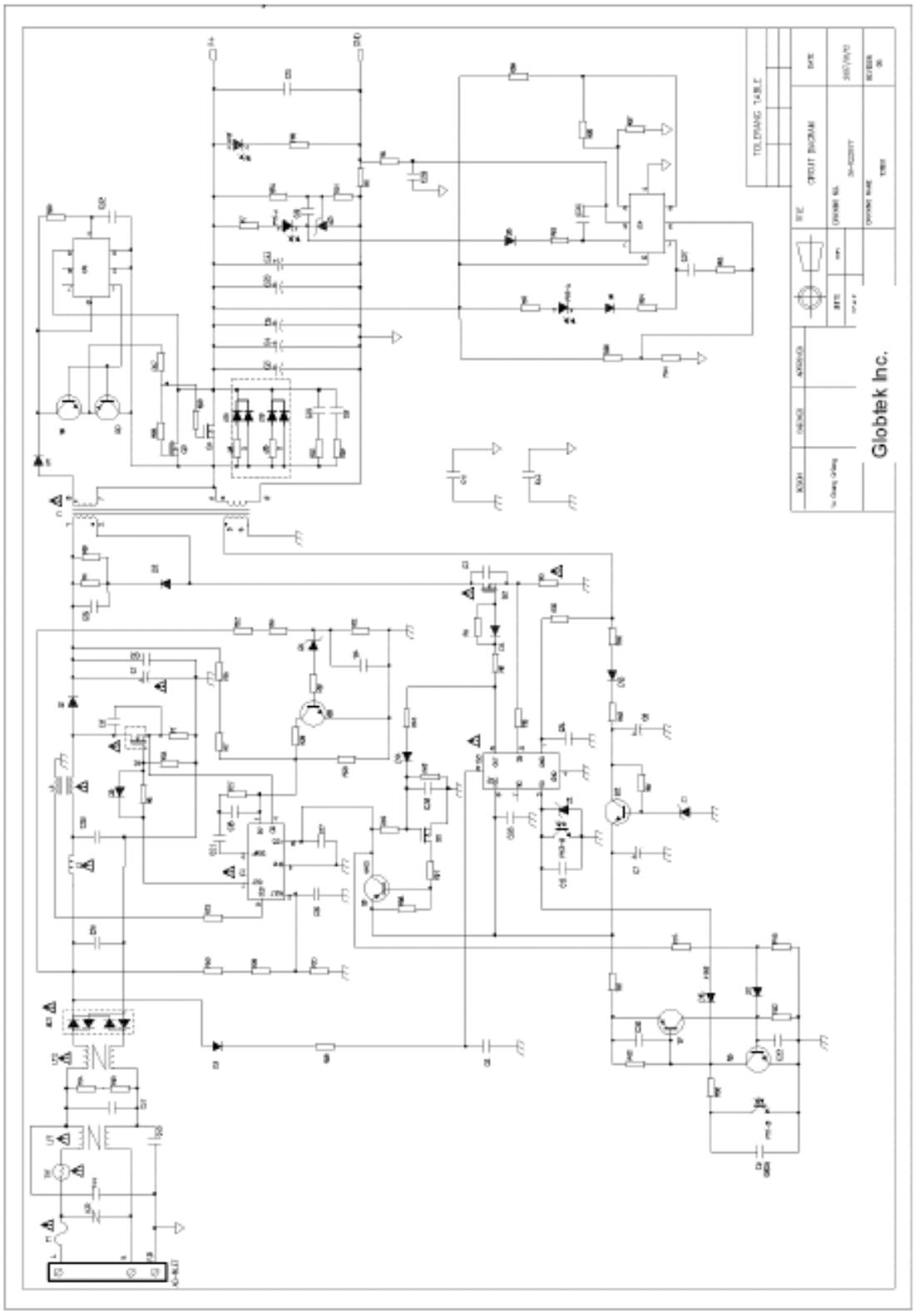
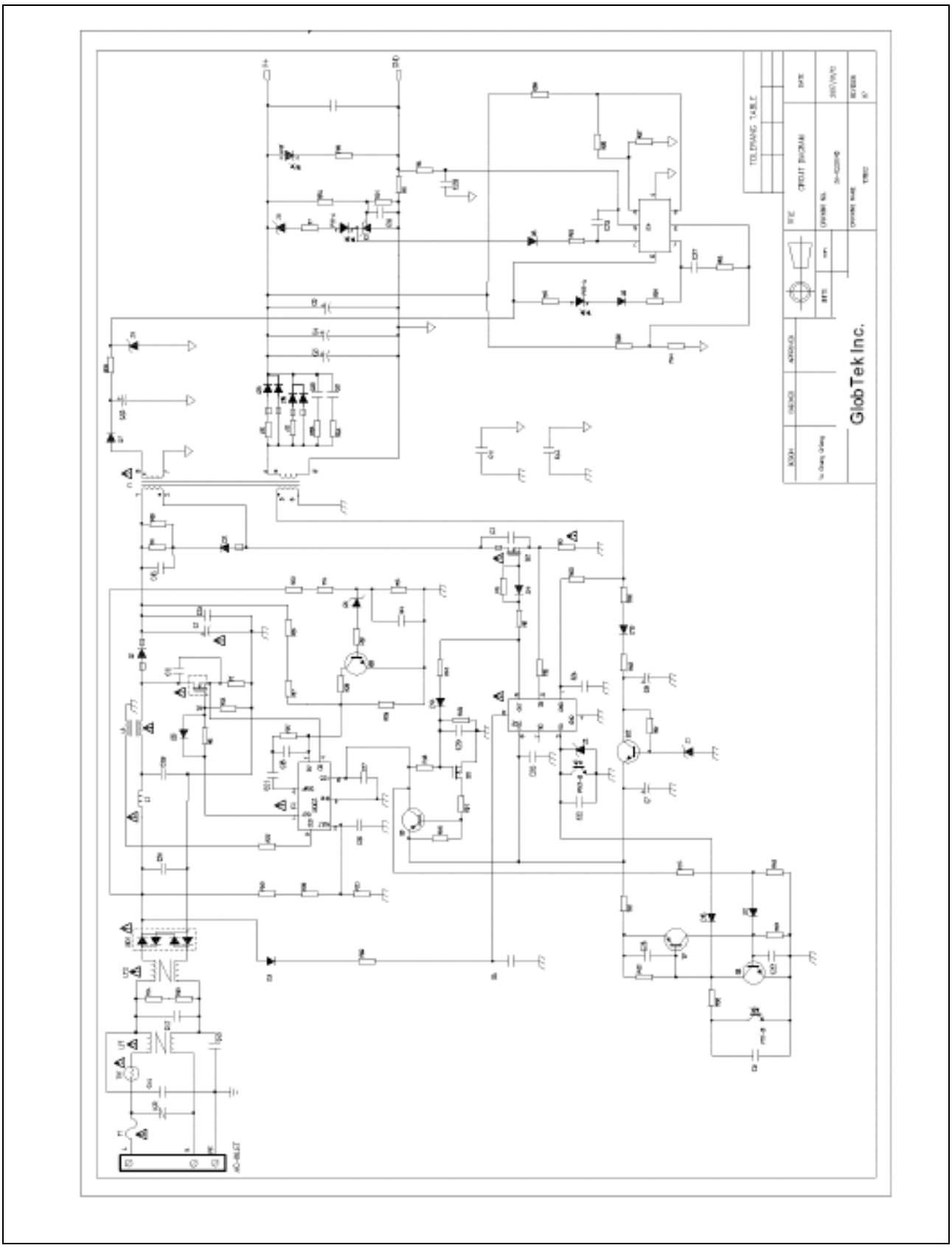
XP 0817

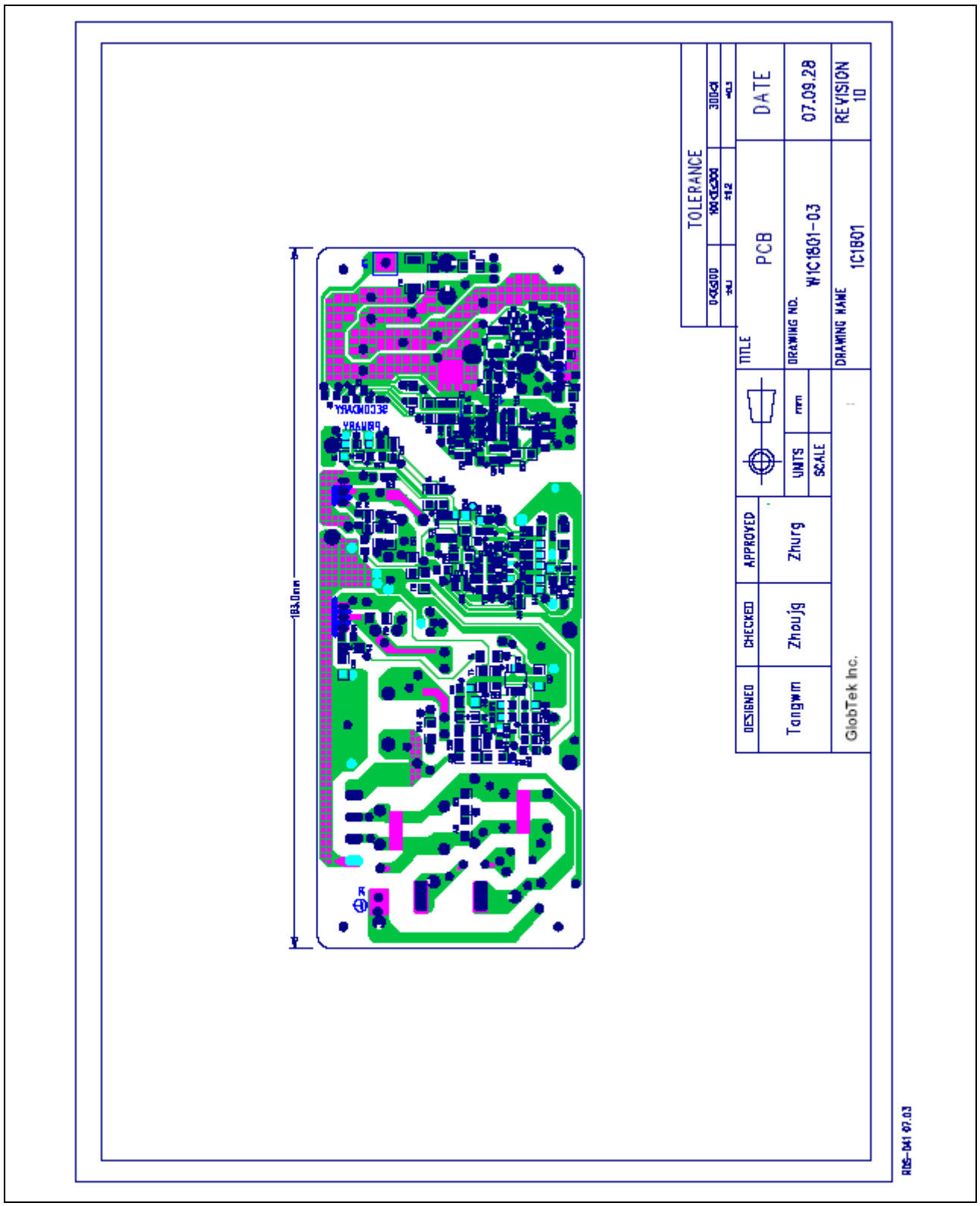


Enclosure No. 3
Schematics, PCB Layouts

(5 pages including this cover page)


Globtek Inc.


GlobTek Inc.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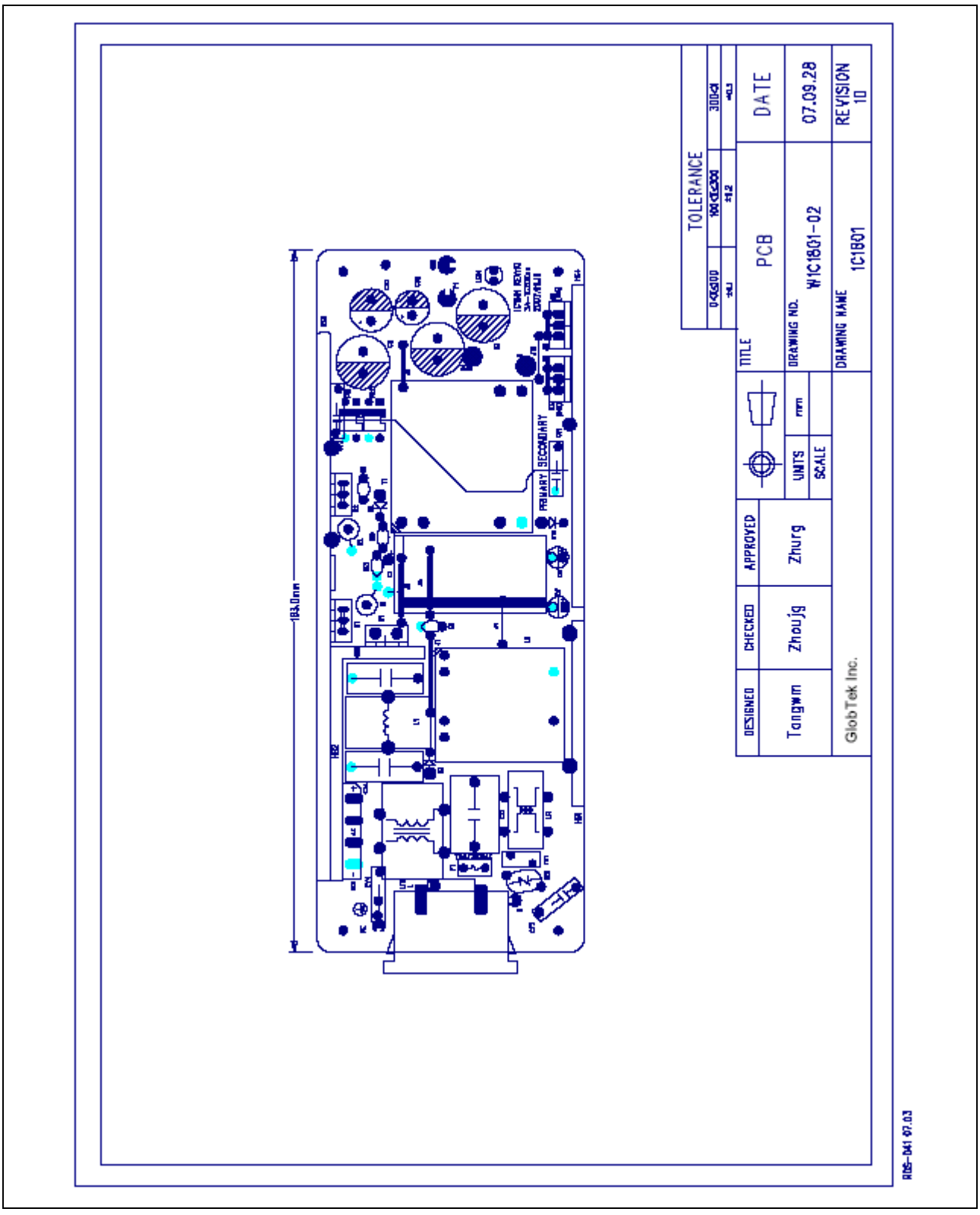
DATE
07.09.28
REVISION
10
TITLE
PCB
DRAWING NO.
W1C1801-03
DRAWING NAME
1C1801
UNITS
mm
SCALE
DESIGNED
Tangwm
CHECKED
Zhoujg
APPROVED
Zhurg
GlobTek Inc.
183.0mm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DRAWING NAME
TITLE
DESIGNED
CHECKED
APPROVED
Tangwm
Zhaujg
Zhurg
UNITS
mm
SCALE
GlobTek Inc.
PRIMARY
SECONDARY
183.0mm

Enclosure No. 4
Transformer Data Sheets

(30 pages including this cover page)

SPECIFICATION FOR APPROVAL

CUSTOMER	英格爾	CUSTOMER' S P/N	XF00519
ISSUE DATE	08.08.11	OUR P/N	A9111-1449019810(1.0)

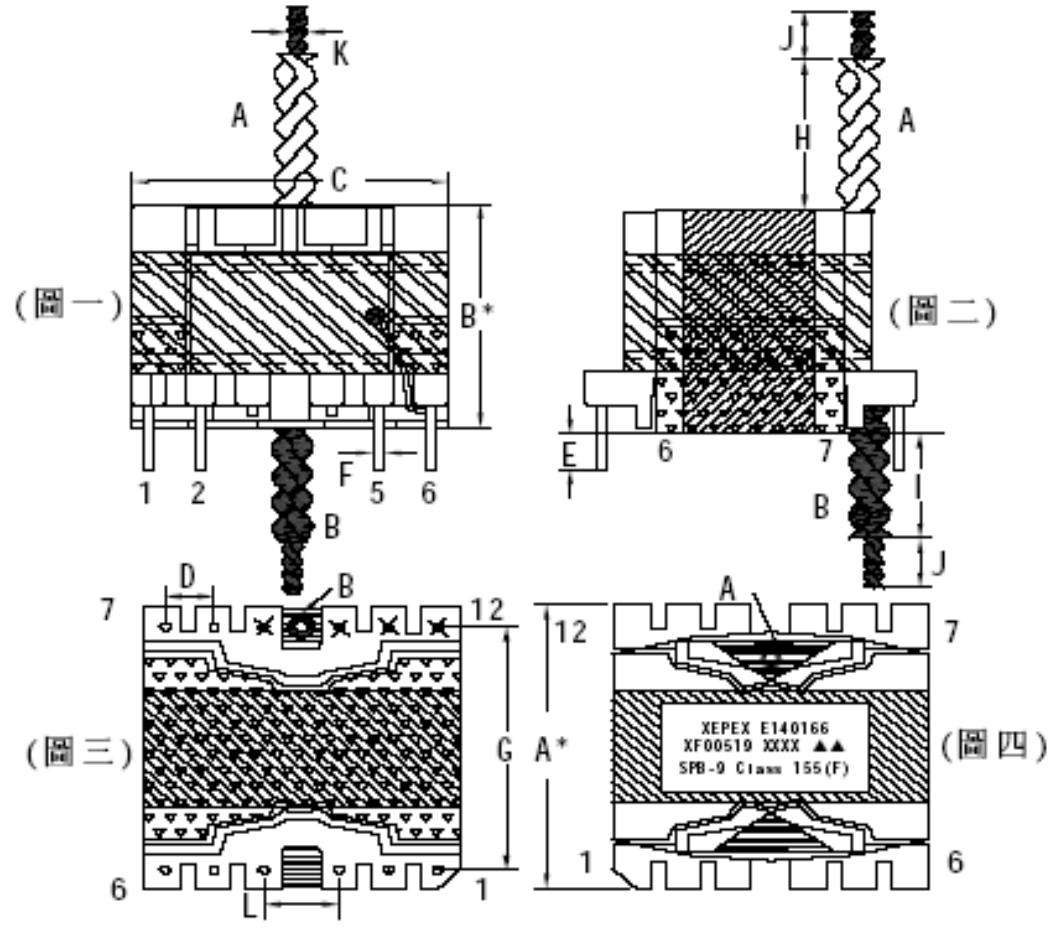
SOURCE CONTROL DRAWING

REVISIONS

REV.	DESCRIPTION	DATE	MADE BY	CHKD BY
A	送承認	08.08.11	肖金連	張志鋒

SPECIFICATION

1.OUTLINE DIMENSION: (UNIT: mm)



▲▲ 表示生產地("XP"表示深圳銳普,"KXP"表示昆山銳普).
"xxxx"前兩個"xx"表示公元年份,后兩個"xx"表示周期.

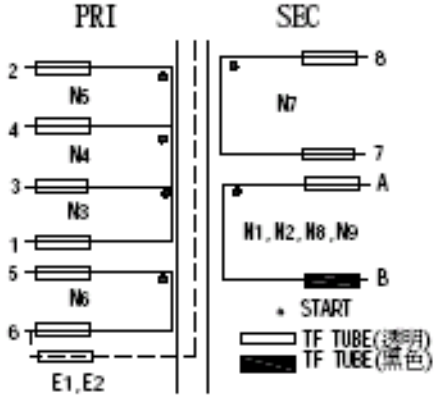
*. A,B 均為飛線,TF TUBE 長度均從 CORE 上量起,成品后 A 互絞在一起, B 互絞在一起.
*. PIN9,10,11,12,CUT OFF, PIN3,4 CUT OFF 1/2. (見圖一與圖三) *. "A*"項尺寸為 BOBBIN 尺寸.
*. 標簽貼於產品頂部且字体朝 PIN1~6 側(見圖四)
*. 單片 CORE 中柱需點膠(如後圖示)→PIN端 CORE 須加工(如後圖示) →CORE TAPE UL(Y) 3TS→包線包外圍 TAPE UL(Y) 2TS→焊外銅箔 0.025*7mm(背膠)焊點于 PIN1~12 側,接引線 0.3 ∮ x1P 并穿 TF TUBE 于 PIN6→包成品線包外圍 TAPE UL(Y) 2TS.
*. 飛線以實合 PCB 板為准. *.含浸前 CORE 須往 PIN端推.

DIM	A*	B*	C	D	E	F	G	H	I	J	K	L
	+/-0.5	MAX	MAX	+/-0.5	+/-0.5	+/-0.1	+/-0'.5	+/-2	+/-2	+/-1	MAX	+/-0.5
SPEC	34.0	22.5	35.0	5.08	4.0	0.8	30.5	25.0	15.0	5.0	2.5	7.62

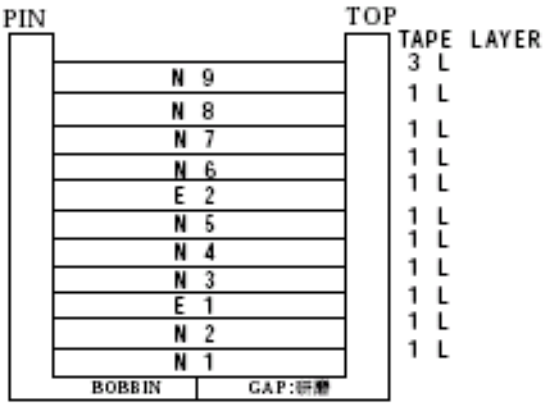
DESCRIPTION	TRANSFORMER	Customer P/N	XF00519	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

SPECIFICATION

2.SCHEMATIC:



3.WINDING SEQUENCE:



4.WINDING TABLE:

Winding No (組別)	Margin Tape (檔邊膠帶)	PIN (腳位)	Wire&Wire Copper (線徑 X股數)	Trums (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	0	A ~ B	0.40 ϕ x 3P (三層絕緣線)	4TS	密 繞	1 L	16*38(透明) /16*28(黑色)
N 2	0	A ~ B	0.40 ϕ x 3P (三層絕緣線)	4 TS	密 繞	1 L	16*38(透明) /16*28(黑色)
E 1	0	6 ~	0.025x7mm	1 TS	背 膠	1 L	26*16/0
N 3	0	3 ~ 1	0.32 ϕ x3P	8TS	密 繞	1 L	19*15/19*15
N 4	0	4 ~ 3	0.32 ϕ x3P	8TS	密 繞	1 L	19*15/19*15
N 5	0	2 ~ 4	0.32 ϕ x3P	8TS	密 繞	1 L	19*15/19*15
E 2	0	6 ~	0.025x7mm	1 TS	背 膠	1 L	26*15/0
N 6	0	5 ~ 6	0.20 ϕ x1P	5 TS	疏 繞	1 L	30*15/30*15
N 7	0	8 ~ 7	0.20 ϕ x1P (三層絕緣線)	4 TS	疏 繞	1 L	26*13/26*13
N 8	0	A ~ B	0.40 ϕ x 3P (三層絕緣線)	4 TS	密 繞	1 L	16*38(透明) /16*28(黑色)
N 9	0	A ~ B	0.40 ϕ x 3P (三層絕緣線)	4 TS	密 繞	3 L	16*38(透明) /16*28(黑色)

NOTE:

1. N3,N4,N5 均為密繞各佔一層. N6,N7 為疏繞各佔一層. N7 使用三層絕緣線繞制,須先脫皮后鍍錫.
2. E1,E2 為內銅(背膠)從有線端起繞,接引線 0.3 ϕ *1P.
3. N1,N2,N8,N9 均為密繞各佔一層,且均使用三層絕緣線繞制,須先脫皮后鍍錫,A,B 均為飛線,A 穿透明 TF TUBE 從 PIN7~12 側頂部缺口處進線,B 穿黑色 TF TUBE 從 PIN 端 PIN9-10 間凹槽出線,飛線長度及量法參照外觀圖所示.
4. 各部分尺寸請參照外觀所示.

DESCRIPTION	TRANSFORMER	Customer P/N	XF00519	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

SPECIFICATION

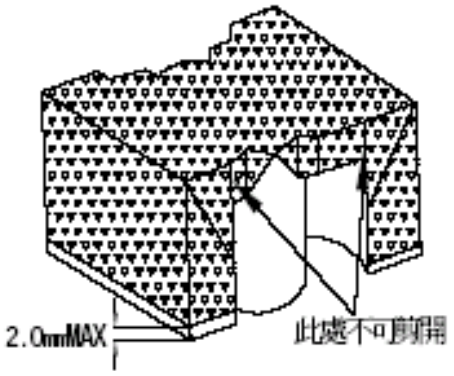
5.ELECTRCAL CHARACTERISTIC:(電器特性)

TEST CONDITION : TEMPERATURE AT 25℃
HUMIDITY AT 65 ±5% RH

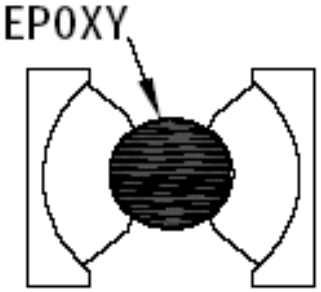
TEST POINT	INDUCTANCE(L)	LK	DCR	TEST INSTRUMENT
(1---2)	1KHz/0.25V 0.25mH+/-10%	1KHz/0.25V 8.0uH MAX (短路飛線)	150.0mΩ MAX	CH-1061A(100Ω) CH-502A
(5---6)	1KHz/0.25V 10.0uH REF		0.50Ω MAX	CH-1061A(100Ω) CH-502A
(8---7)	1KHz/0.25V 6.50uH REF		225.0mΩ MAX	CH-1061A(100Ω) CH-502A
(A---B)	1KHz/0.25V 6.0uH REF		6.0mΩ MAX	CH-1061A(100Ω) CH-502A

1. HI-POT TEST: (CH-9052)
   PRI. TO SEC. ..... AC3.00 KV / (50 / 60Hz) /5mA /60 sec
   PRI. TO CORE. ..... AC 1.00 KV / (50 / 60Hz) /5mA /60sec
   SEC. TO CORE. ..... AC1.00KV / (50 / 60Hz) /5mA /60 sec
2. A.R.C TEST: (CH-9052)
   PRI. TO SEC. ..... AC 3.00KV / (50 / 60Hz) /12mA /1 sec

*. PIN端 CORE 加工圖如下:用 3M 1350F-1*1L的 TAPE 加工.



*鐵芯中柱點膠如下圖所示:



DESCRIPTION	TRANSFORMER	Customer P/N	XF00519	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

SPECIFICATION

6. MATERIAL LIST :

ITEM		MATERIAL	SUPPLIER	UL NO.	TEMP RATING
1	CORE	FERRITE CORE PQ3220 (PC44) (3C96) (2HM5)	TDK (V) PHILIPS NICERA		
2	BOBBIN	PHENOLIC PM9820 PQ3220 12PIN 立式	SUMITOMO BAKELITE CO.,LTD	E41429	150℃
3	WIRE	Polyester ENAMELLED WIREWM79C&MW80C (UEWN/U)	PACIFIC ELECTRIC WIRE & CABLE CO., LTD	E201757	155℃
		Polyester ENAMELLED WIREMW79C(TY1700-U155)&MW80C(TYSUN-F155)	TA YA ELECTRIC WIRE & CABLE CO., LTD	E84201	
		Polyester ENAMELLED WIRE MW79C(SFFW-2)& MW80C (SFFY-2)	JUNG SHING WIRE CO.,LTD	E174837	
4	TRIPLE WIRE	TRIPLE INSULATION WIRE TIW-3	TOTOKU ELECTRIC CO.,LTD	E166483	155℃
5	TAPE	POLYESTER FILM TAPE(YELLOW) 3M 1350F-1	3M COMPANY ELECTRICAL PRODUCTS DIV	E17385	130℃
6	TUBE	RECOGNIZED COMPONENT (YDPU2) TEFLON TUBING 200℃ 300V VW-1 TFT&TFL	GREAT HOLDINGINDUSTRIAL CO.,LTD	E156256	200℃
7	VARNISH	BC-346A	JOHN C DOLPH CO	E51047	130℃
		V-1630FS	P D GEORGE/VIKING	E73071	
8	EPOXY	EPORITE H907	DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY	E304477	90℃
9	COPPER	0.025x7mm(背膠)	HONG KONG ZHENGZEXIANG INDUSTRIAL DEV.LIMITED.		

DESCRIPTION	TRANSFORMER	Customer P/N	XF00519	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

XEPEX

COMPONENT (Cpk) DATA SHEET

Customer P/N: XF00519
MAKER: XEPEX
MAKER P/N: A9111-1449019810(1.0)

08.08.11

Spec / Item	INDUCTANCE				LK	DCR				ACR	HI-POT			CORE	MAKER
	1KHz/0.25V				1KHz/0.25V					12mA1SEC	5mA 60SEC			PQ3220	
	1~2	5~6	8~7	A~B	1~2	1~2	5~6	8~7	A~B	P~S	P~S	P~C	S~C		
	0.25mH+/-10%	10.0uH REF	6.5uH REF	6.0uH REF	8.0uH MAX	150.0mO MAX	0.50O MAX	225.0mO MAX	6.0mO MAX	3.00KV	3.00KV	1.0KV	1.0KV		
1	0.226	10.60	6.30	6.60	4.31	116.520	0.23	173.700	3.70	PASS	PASS	PASS	PASS	PC44	XEPEX
2	0.229	10.13	6.18	5.95	4.22	117.800	0.23	178.100	3.80	PASS	PASS	PASS	PASS	PC44	XEPEX
3	0.223	9.55	6.11	6.28	4.32	114.600	0.22	186.600	3.50	PASS	PASS	PASS	PASS	PC44	XEPEX
4	0.225	9.82	6.44	6.07	4.20	116.400	0.23	180.300	3.50	PASS	PASS	PASS	PASS	PC44	XEPEX
5	0.246	9.92	6.80	5.99	4.33	116.500	0.23	173.900	3.50	PASS	PASS	PASS	PASS	PC44	XEPEX
6															
7															
8															
9	測試儀器:CH-1061A(100O)					測試儀器:CH-502A				測試儀器:CH-9052					
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
Min.	0.22	9.55	6.11	5.95	4.20	114.60	0.22	173.70	3.50						
Max.	0.25	10.60	6.80	6.60	4.33	117.80	0.23	186.60	3.80						
Xbar	0.23	10.00	6.37	6.18	4.28	116.36	0.23	178.52	3.60						
S	0.01	0.39	0.27	0.27	0.05	1.14	0.00	5.32	0.14						
USL	0.275	14.00	10.00	10.00	8.00	150.00	0.50	225.00	6.00						
LSL	0.225	6.00	4.00	4.00	2.00	100.00	0.15	150.00	2.00						
Ca	0.81	0.00	0.21	0.27	0.24	0.35	0.55	0.24	0.20						
Cp	0.89	3.39	3.66	3.73	16.37	7.30	13.04	2.35	4.71						
CPL	0.17	3.40	2.89	2.71	12.42	4.78	5.81	1.79	3.77						
CPU	1.62	3.39	4.44	4.75	20.33	9.82	20.27	2.91	5.66						
Cpk	0.17	3.39	2.89	2.71	12.42	4.78	5.81	1.79	3.77						

CONCLUSION:OK PREPARED BY:肖金連 CHECK BY:許秀連陳本慶 APPROVED BY:張志鋒

QM-TP-7310-04

SPECIFICATION FOR APPROVAL

CUSTOMER	英格爾	CUSTOMER' S P/N	XF00522
ISSUE DATE	08.08.11	OUR P/N	A9111-1449019510(1.0)

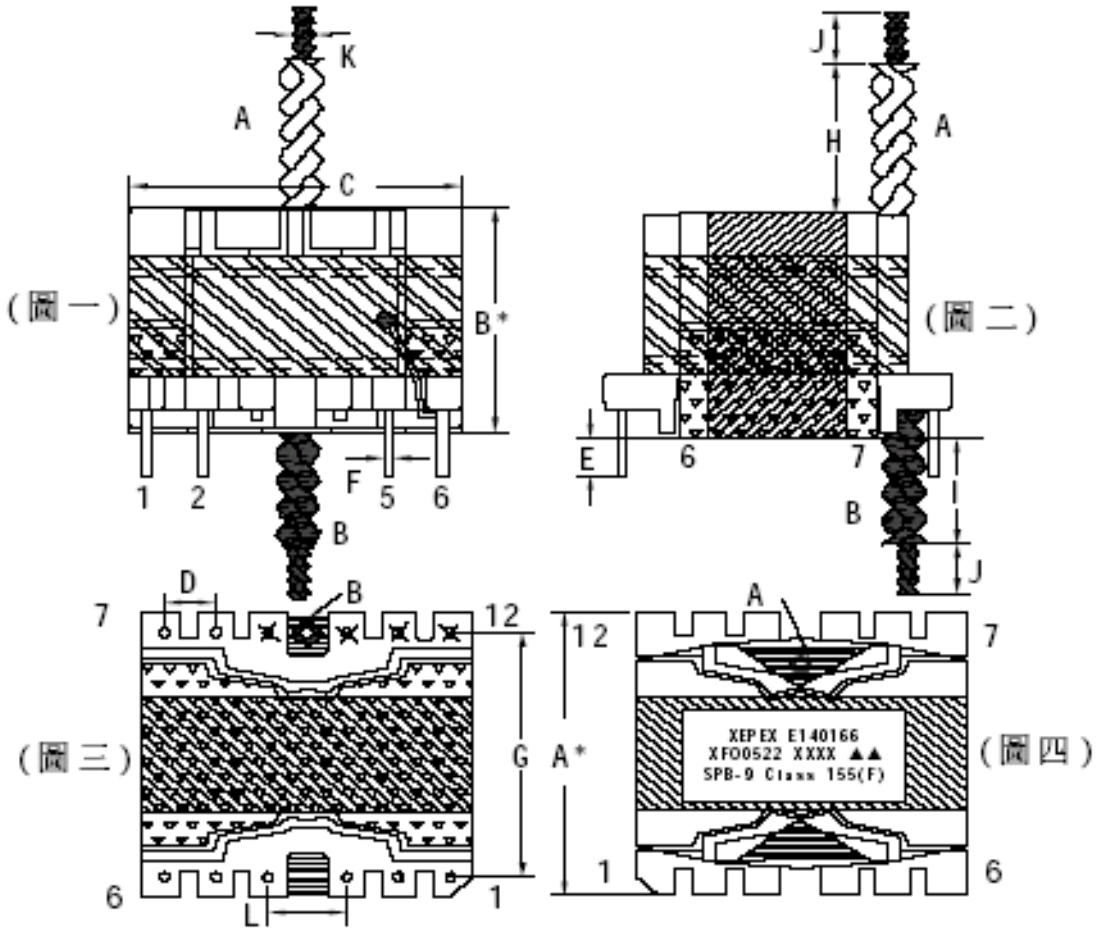
SOURCE CONTROL DRAWING

REVISIONS

REV.	DESCRIPTION	DATE	MADE BY	CHKD BY
A	送承認	08.08.11	肖金連	張志鋒

SPECIFICATION

1.OUTLINE DIMENSION: (UNIT: mm)



▲▲ 表示生產地("XP"表示深圳銳普,"KXP"表示昆山銳普).
"xxxx"前兩個"xx"表示公元年份,后兩個"xx"表示周期.

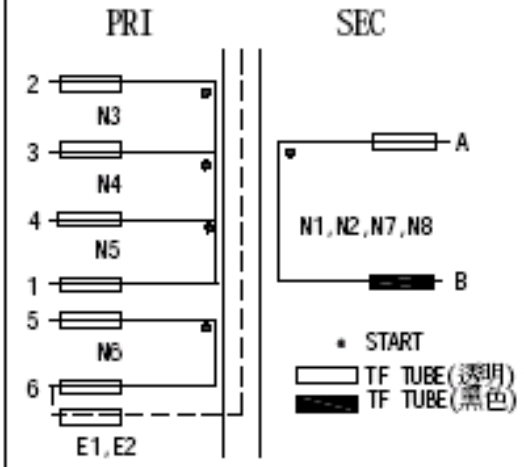
*. A,B 均為飛線,TF TUBE 長度均從 CORE 上量起,成品后 A 互絞在一起, B 互絞在一起.
*. PIN9,10,11,12,CUT OFF, PIN3,4 CUT OFF 1/2. (見圖一與圖三) *. "A*"項尺寸為BOBBIN尺寸.
*. 標簽貼於產品頂部且字体朝 PIN1~6 側(見圖四)
*. 單片 CORE 中柱需點膠(如後圖示)→PIN端 CORE 須加工(如後圖示) →CORE TAPE UL(Y) 3TS→包線包外圍 TAPE UL(Y) 2TS→焊外銅箔 0.025*7mm(背膠)焊點于 PIN1~12 側,接引線 0.3 ϕ x1P 并穿 TF TUBE 于 PIN6→包成品線包外圍 TAPE UL(Y) 2TS.
*. 飛線以實合 PCB 板為准. *.含浸前 CORE 須往 PIN端推.

DIM	A*	B*	C	D	E	F	G	H	I	J	K	L
	+/-0.5	MAX	MAX	+/-0.5	+/-0.5	+/-0.1	+/-0'.5	+/-2	+/-2	+/-1	MAX	+/-0.5
SPEC	34.0	22.5	35.0	5.08	4.0	0.8	30.5	25.0	15.0	5.0	2.5	7.62

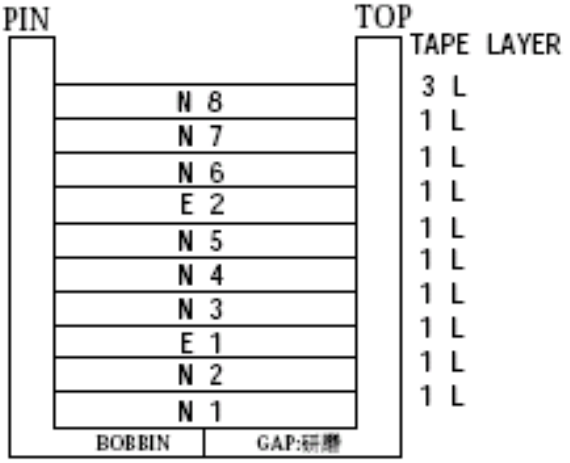
DESCRIPTION	TRANSFORMER	Customer P/N	XF00522	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

SPECIFICATION

2.SCHEMATIC:



3.WINDING SEQUENCE:



4.WINDING TABLE:

Winding No (組別)	Margin Tape (檔邊膠帶)	PIN (腳位)	Wire&Wire Copper (線徑 X股數)	Trums (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	0	A ~ B	0.40 ϕ x 2P (三層絕緣線)	6TS	密 繞	1 L	17*38(透明) /17*28(黑色)
N 2	0	A ~ B	0.40 ϕ x 2P (三層絕緣線)	6 TS	密 繞	1 L	17*38(透明) /17*28(黑色)
E 1	0	6 ~	0.025x7mm	1 TS	背 膠	1 L	26*15/0
N 3	0	2 ~ 3	0.32 ϕ x3P	8TS	密 繞	1 L	19*13/19*13
N 4	0	3 ~ 4	0.32 ϕ x3P	8TS	密 繞	1 L	19*13/19*13
N 5	0	4 ~ 1	0.32 ϕ x3P	8TS	密 繞	1 L	19*13/19*13
E 2	0	6 ~	0.025x7mm	1 TS	背 膠	1 L	26*15/0
N 6	0	5 ~ 6	0.20 ϕ x1P	5 TS	疏 繞	1 L	30*13/30*13
N 7	0	A ~ B	0.40 ϕ x 2P (三層絕緣線)	6 TS	密 繞	1 L	17*38(透明) /17*28(黑色)
N 8	0	A ~ B	0.40 ϕ x 2P (三層絕緣線)	6 TS	密 繞	3 L	17*38(透明) /17*28(黑色)

NOTE:

1. N3,N4,N5 均為密繞各佔一層. N6 為疏繞佔一層.
2. E1,E2 為內銅(背膠)從有線端起繞,接引線 0.3 ϕ *1P.
3. N1,N2,N7,N8 均為密繞各佔一層,且均使用三層絕緣線繞制,須先脫皮后鍍錫,A,B 均為飛線,A 穿透明 TF TUBE 從 PIN7~12 側頂部缺口處進線,B 穿黑色 TF TUBE 從 PIN 端 PIN9-10 間凹槽出線,飛線長度及量法參照外觀圖所示.
4. 各部分尺寸請參照外觀所示.

DESCRIPTION	TRANSFORMER	Customer P/N	XF00522	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀	REPORTED	肖金連

SPECIFICATION

5.ELECTRCAL CHARACTERISTIC:(電器特性)

TEST CONDITION : TEMPERATURE AT 25℃
HUMIDITY AT 65 ±5% RH

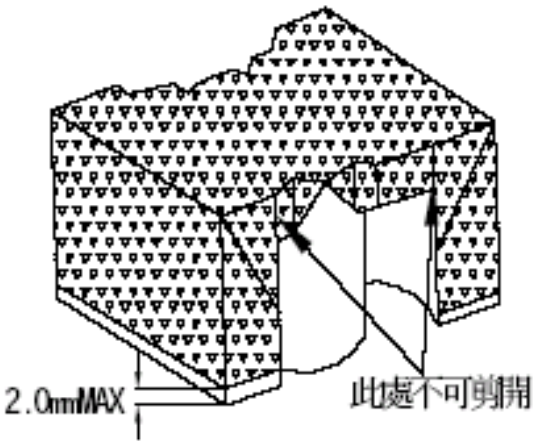
TEST POINT	INDUCTANCE(L)	LK	DCR	TEST INSTRUMENT
(2---1)	1KHz/0.25V 0.33mH+/-10%	1KHz/0.25V 10.0uH MAX (短路飛線)	150.0mΩ MAX	CH-1061A(100Ω) CH-502A
(5---6)	1KHz/0.25V 14.5uH REF		0.50Ω MAX	CH-502A
(A---B)	1KHz/0.25V 20.5uH REF		10.0mΩ MAX	CH-502A

1. HI-POT TEST: (CH-9052)
   PRI. TO SEC. ---------- AC3.00 KV / (50 / 60Hz) /5mA /60 sec
   PRI. TO CORE. ---------- AC 1.00 KV / (50 / 60Hz) /5mA /60sec
   SEC. TO CORE. ---------- AC1.00KV / (50 / 60Hz) /5mA /60 sec

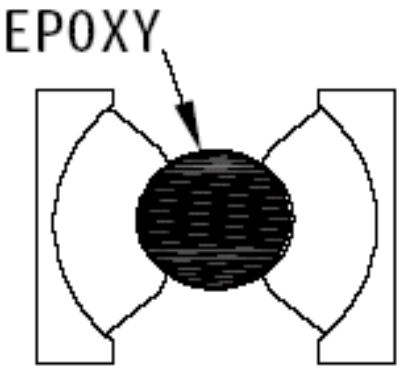
2. A.R.C TEST: (CH-9052)

   PRI. TO SEC. ---------- AC 3.00KV / (50 / 60Hz) /12mA /1 sec

*. PIN端 CORE 加工圖如下:用 3M 1350F-1*1L的 TAPE 加工.



*鐵芯中柱點膠如下圖所示:



DESCRIPTION	TRANSFORMER	Customer P/N	XF00522	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

SPECIFICATION

6. MATERIAL LIST :

ITEM		MATERIAL	SUPPLIER	UL NO.	TEMP RATING
1	CORE	FERRITE CORE PQ3220 (PC44) (3C96) (2HM5)	TDK (V) PHILIPS NICERA		
2	BOBBIN	PHENOLIC PM9820 PQ3220 12PIN 立式	SUMITOMO BAKELITE CO.,LTD	E41429	150℃
3	WIRE	Polyester ENAMELLED WIREWM79C&MW80C (UEWN/U)	PACIFIC ELECTRIC WIRE & CABLE CO., LTD	E201757	155℃
		Polyester ENAMELLED WIREMW79C(TY1700-U155)&MW80C(TYSUN-F155)	TA YA ELECTRIC WIRE & CABLE CO., LTD	E84201	
		Polyester ENAMELLED WIRE MW79C(SFFW-2)& MW80C (SFFY-2)	JUNG SHING WIRE CO.,LTD	E174837	
4	TRIPLE WIRE	TRIPLE INSULATION WIRE TIW-3	TOTOKU ELECTRIC CO.,LTD	E166483	155℃
5	TAPE	POLYESTER FILM TAPE(YELLOW) 3M 1350F-1	3M COMPANY ELECTRICAL PRODUCTS DIV	E17385	130℃
6	TUBE	RECOGNIZED COMPONENT (YDPU2) TEFLON TUBING 200℃ 300V VW-1 TFT&TFL	GREAT HOLDINGINDUSTRIAL CO.,LTD	E156256	200℃
7	VARNISH	BC-346A	JOHN C DOLPH CO	E51047	130℃
		V-1630FS	P D GEORGE/VIKING	E73071	
8	EPOXY	EPORITE H907	DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY	E304477	90℃
9	COPPER	0.025x7mm(背膠)	HONG KONG ZHENGZEXIANG INDUSTRIAL DEV.LIMITED.		

DESCRIPTION	TRANSFORMER	Customer P/N	XF00522	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

XEPEX

COMPONENT (Cpk) DATA SHEET

Customer P/N: XF00522
MAKER: XEPEX
MAKER P/N: A9111-1449019510(1.0)

08.08.11

Spec / Item	INDUCTANCE			LK	DCR			ACR	HI-POT			CORE	MAKER
	1KHz/0.25V			1KHz/0.25V				12mA1SEC	5mA 60SEC			PQ3220	
	2~1	5~6	A~B	2~1	2~1	5~6	A~B	P~S	P~S	P~C	S~C		
	0.33mH+/-10%	14.5uH REF	20.5uH REF	10.0uH MAX	150.0mO MAX	0.50O MAX	10.0mO MAX	3.00KV	3.00KV	1.0KV	1.0KV		
1	0.330	14.60	20.27	6.20	115.200	0.230	7.29	PASS	PASS	PASS	PASS	PC44	XEPEX
2	0.320	14.90	20.60	6.20	115.500	0.220	7.30	PASS	PASS	PASS	PASS	PC44	XEPEX
3	0.340	14.60	20.00	6.90	115.400	0.230	7.27	PASS	PASS	PASS	PASS	PC44	XEPEX
4	0.330	15.00	20.80	5.90	114.300	0.230	7.30	PASS	PASS	PASS	PASS	PC44	XEPEX
5	0.330	14.80	21.20	5.70	115.800	0.230	7.32	PASS	PASS	PASS	PASS	PC44	XEPEX
6													
7				短路電線									
8													
9	測試儀器:CH-1061A(100O)				測試儀器:CH-502A			測試儀器:CH-9052					
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
Min.	0.32	14.60	20.00	5.70	114.30	0.22	7.27						
Max.	0.34	15.00	21.20	6.90	115.80	0.23	7.32						
Xbar	0.33	14.78	20.57	6.18	115.24	0.23	7.30						
S	0.01	0.18	0.47	0.45	0.57	0.00	0.02						
USL	0.3630	18.00	25.00	10.00	150.00	0.50	9.00						
LSL	0.2970	10.00	15.00	2.00	100.00	0.15	2.00						
Ca	0.00	0.20	0.11	0.05	0.39	0.55	0.51						
Cp	1.56	7.45	3.58	2.93	14.66	13.04	64.22						
CPL	1.56	8.91	3.99	3.06	8.94	5.81	97.18						
CPU	1.56	6.00	3.17	2.80	20.39	20.27	31.27						
Cpk	1.56	6.00	3.17	2.80	8.94	5.81	31.27						

CONCLUSION:OK PREPARED BY:肖金連 CHECK BY:許秀連 陳本慶 APPROVED BY:張志錄

QM-TP-7310-04

SPECIFICATION FOR APPROVAL

CUSTOMER	英格爾	CUSTOMER' S P/N	XF00523
ISSUE DATE	08.08.11	OUR P/N	A9111-1449019710(1.0)

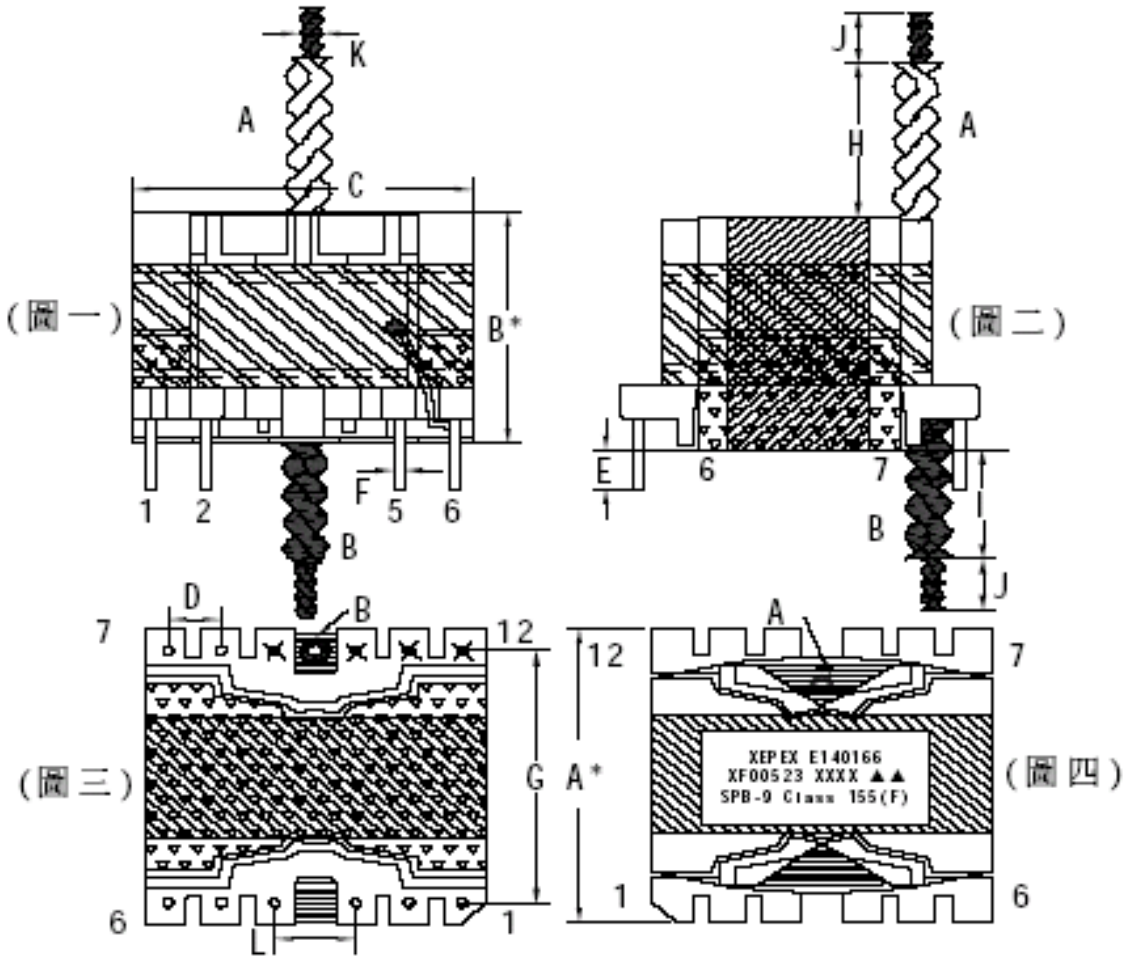
SOURCE CONTROL DRAWING

REVISIONS

REV.	DESCRIPTION	DATE	MADE BY	CHKD BY
A	送承認	08.08.11	肖金連	張志鋒

SPECIFICATION

1.OUTLINE DIMENSION: (UNIT: mm)



▲▲ 表示生產地("XP"表示深圳銳普,"KXP"表示昆山銳普).
"xxxx"前兩個"xx"表示公元年份,后兩個"xx"表示周期.

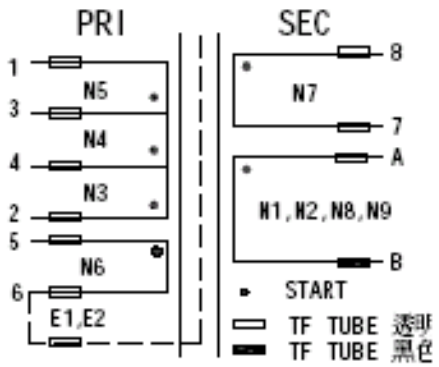
*. A,B 均為飛線,TF TUBE 長度均從 CORE 上量起,成品后 A 互絞在一起, B 互絞在一起.
*. PIN9,10,11,12,CUT OFF, PIN3,4 CUT OFF 1/2. (見圖一與圖三) *. "A*"項尺寸為 BOBBIN 尺寸.
*. 標簽貼於產品頂部且字体朝 PIN1~6 側(見圖四)
*. 單片 CORE 中柱需點膠(如後圖示)→PIN 端 CORE 須加工(如後圖示) →CORE TAPE UL(Y) 3TS→包線包外圍 TAPE UL(Y) 2TS→焊外銅箔 0.025*6mm(背膠)焊點于 PIN1~12 側,接引線 0.3 ϕ x1P 并穿 TF TUBE 于 PIN6→包成品線包外圍 TAPE UL(Y) 2TS.
*. 飛線以實合 PCB 板為准. *.含浸前 CORE 須往 PIN 端推.

DIM	A*	B*	C	D	E	F	G	H	I	J	K	L
	+/-0.5	MAX	MAX	+/-0.5	+/-0.5	+/-0.1	+/-0'.5	+/-2	+/-2	+/-1	MAX	+/-0.5
SPEC	34.0	23.0	35.0	5.08	4.0	0.8	30.5	25.0	15.0	5.0	1.5	7.62

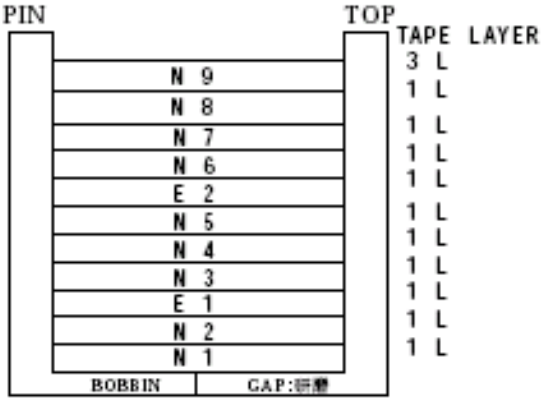
DESCRIPTION	TRANSFORMER	Customer P/N	XF00523	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

SPECIFICATION

2.SCHEMATIC:



3.WINDING SEQUENCE:



4.WINDING TABLE:

Winding No (組別)	Margin Tape (檔牆膠帶)	PIN (腳位)	Wire&Wire Copper (線徑 X股數)	Trums (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	0	A ~ B	0.40 ϕ x 1P (三層絕緣線)	12TS	密 繞	1 L	23*38(透明) /23*28(黑色)
N 2	0	A ~ B	0.40 ϕ x 1P (三層絕緣線)	12TS	密 繞	1 L	23*38(透明) /23*28(黑色)
E 1	0	6 ~	0.025x6mm	1 TS	背 膠	1 L	26*15/0
N 3	0	2 ~ 4	0.32 ϕ x3P	8TS	密 繞	1 L	19*13/19*13
N 4	0	4 ~ 3	0.32 ϕ x3P	8TS	密 繞	1 L	19*13/19*13
N 5	0	3 ~ 1	0.32 ϕ x3P	8TS	密 繞	1 L	19*13/19*13
E 2	0	6 ~	0.025x6mm	1 TS	背 膠	1 L	26*15/0
N 6	0	5 ~ 6	0.20 ϕ x1P	5 TS	疏 繞	1 L	28*15/28*15
N 7	0	8 ~ 7	0.20 ϕ x1P (三層絕緣線)	6TS	疏 繞	1 L	26*15/26*15
N 8	0	A ~ B	0.40 ϕ x 1P (三層絕緣線)	12 TS	密 繞	1 L	23*38(透明) /23*28(黑色)
N 9	0	A ~ B	0.40 ϕ x 1P (三層絕緣線)	12 TS	密 繞	3 L	23*38(透明) /23*28(黑色)

NOTE:

1. N3,N4,N5 均為密繞各佔一層. N6,N7 為疏繞各佔一層.且 N7 使用三層絕緣線繞制, 須先脫皮后鍍錫.
2. E1,E2 為內銅(背膠)從有線端起繞,接引線 0.3 ϕ *1P.
3. N1,N2,N8,N9 均為密繞各佔一層,且均使用三層絕緣線繞制,須先脫皮后鍍錫,A,B 均為飛線,A 穿透明套管從 PIN7~12 側頂部走線,B 穿黑色套管從 PIN7~12 側底部出線, 飛線長度及量法參照外觀圖所示.
4. 各部分尺寸請參照外觀所示.

DESCRIPTION	TRANSFORMER	Customer P/N	XF00523	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

SPECIFICATION

5.ELECTRCAL CHARACTERISTIC:(電器特性)

TEST CONDITION : TEMPERATURE AT 25℃
HUMIDITY AT 65 ±5% RH

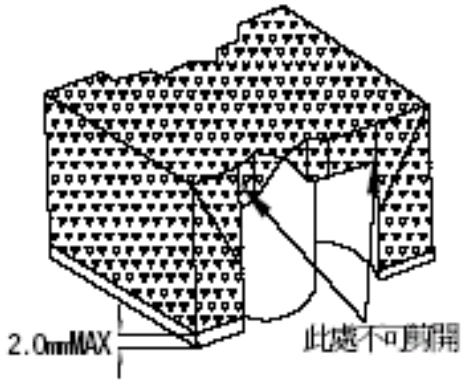
TEST POINT	INDUCTANCE(L)	LK	DCR	TEST INSTRUMENT
(2---1)	1KHz/0.25V 0.33mH+/-5%	1KHz/0.25V 8.0uH MAX (短路飛線)	150.0mΩ MAX	CH-1061A(100Ω) CH-502A
(5---6)	1KHz/0.25V 15.0uH REF		280.0mΩ MAX	CH-1061A(100Ω) CH-502A
(8---7)	1KHz/0.25V 21.0uH REF		310.0mΩ MAX	CH-1061A(100Ω) CH-502A
(A---B)	1KHz/0.25V 83.0uH REF		35.0mΩ MAX	CH-1061A(100Ω) CH-502A

1. HI-POT TEST: (CH-9052)
   PRI. TO SEC. ..... AC3.00 KV / (50 / 60Hz) /5mA /60 sec
   PRI. TO CORE. ..... AC 1.00 KV / (50 / 60Hz) /5mA /60sec
   SEC. TO CORE. ..... AC1.50KV / (50 / 60Hz) /5mA /60 sec

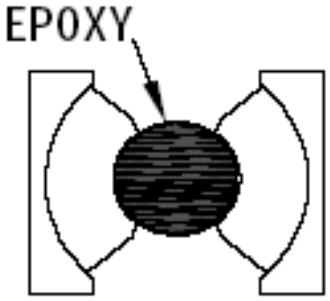
2. A.R.C TEST: (CH-9052)

   PRI. TO SEC. ..... AC 3.00KV / (50 / 60Hz) /12mA /1 sec

*. PIN端 CORE 加工圖如下:用 3M 1350F-1*1L的 TAPE 加工.



*鐵芯中柱點膠如下圖所示:



DESCRIPTION	TRANSFORMER	Customer P/N	XF00523	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

SPECIFICATION

6. MATERIAL LIST :

ITEM		MATERIAL	SUPPLIER	UL NO.	TEMP RATING
1	CORE	FERRITE CORE PQ3220 (PC44) (3C96) (2HM5)	TDK (V) PHILIPS NICERA		
2	BOBBIN	PHENOLIC PM9820 PQ3220 12PIN 立式	SUMITOMO BAKELITE CO.,LTD	E41429	150℃
3	WIRE	Polyester ENAMELLED WIREWM79C&MW80C (UEWN/U)	PACIFIC ELECTRIC WIRE & CABLE CO., LTD	E201757	155℃
		Polyester ENAMELLED WIREMW79C(TY1700-U155)&MW80C(TYSUN-F155)	TA YA ELECTRIC WIRE & CABLE CO., LTD	E84201	
		Polyester ENAMELLED WIRE MW79C(SFFW-2)& MW80C (SFFY-2)	JUNG SHING WIRE CO.,LTD	E174837	
4	TRIPLE WIRE	TRIPLE INSULATION WIRE TIW-3	TOTOKU ELECTRIC CO.,LTD	E166483	155℃
5	TAPE	POLYESTER FILM TAPE(YELLOW) 3M 1350F-1	3M COMPANY ELECTRICAL PRODUCTS DIV	E17385	130℃
6	TUBE	RECOGNIZED COMPONENT (YDPU2) TEFLON TUBING 200℃ 300V VW-1 TFT&TFL	GREAT HOLDINGINDUSTRIAL CO.,LTD	E156256	200℃
7	VARNISH	BC-346A	JOHN C DOLPH CO	E51047	130℃
		V-1630FS	P D GEORGE/VIKING	E73071	
8	EPOXY	EPORITE H907	DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY	E304477	90℃
9	COPPER	0.025x6mm(背膠)	HONG KONG ZHENGZEXIANG INDUSTRIAL DEV.LIMITED.		

DESCRIPTION	TRANSFORMER	Customer P/N	XF00523	DATE	2008/08/11
APPROVED	張志鋒	CHECKED	許秀連	REPORTED	肖金連

XEPEX

COMPONENT (Cpk) DATA SHEET

Customer P/N: XF00523
MAKER: XEPEX
MAKER P/N: A9111-1449019710(1.0)

08.08.11

Spec / Item	INDUCTANCE				LK	DCR				ACR	HI-POT				CORE	MAKER
	1KHz/0.25V				1KHz/0.25V					12mA1SEC	5mA 60SEC				PQ3220	
	2~1	5~6	8~7	A~B	2~1	2~1	5~6	8~7	A~B	P~S	P~S	P~C	S~C			
	0.33mH+/-5%	15.0uH REF	21.0uH REF	83.0uH REF	8.0uH MAX	150.0mΩ MAX	280.0mΩ MAX	310.0mΩ MAX	35.0mΩ MAX	3.00KV	3.00KV	1.0KV	1.5KV			
1	0.33	15.10	21.70	83.50	4.50	117.000	227.00	256.000	27.00	PASS	PASS	PASS	PASS	PASS	PC44	XEPEX
2	0.34	16.20	21.50	82.70	4.50	121.000	226.00	252.000	27.00	PASS	PASS	PASS	PASS	PASS	PC44	XEPEX
3	0.32	14.90	21.50	83.10	4.50	114.000	224.00	255.000	27.00	PASS	PASS	PASS	PASS	PASS	PC44	XEPEX
4	0.33	15.20	21.80	83.80	4.20	114.000	229.00	252.000	26.00	PASS	PASS	PASS	PASS	PASS	PC44	XEPEX
5	0.33	15.20	21.90	84.00	4.40	115.000	228.00	254.000	27.00	PASS	PASS	PASS	PASS	PASS	PC44	XEPEX
6																
7																
8																
9	測試儀器:CH-1061A(100D)					測試儀器:CH-502A					測試儀器:CH-9052					
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																
21																
Min.	0.32	14.90	21.50	82.70	4.20	114.00	224.00	252.00	26.00							
Max.	0.34	16.20	21.90	84.00	4.50	121.00	229.00	256.00	27.00							
Xbar	0.33	15.32	21.68	83.42	4.42	116.20	226.80	253.80	26.80							
S	0.01	0.51	0.18	0.53	0.13	2.95	1.92	1.79	0.45							
USL	0.35	20.00	26.50	100.00	8.00	150.00	280.00	310.00	35.00							
LSL	0.31	13.00	18.50	65.00	2.00	100.00	200.00	220.00	22.00							
Ca	0.01	0.34	0.21	0.05	0.19	0.35	0.33	0.25	0.26							
Cp	0.79	2.30	7.45	11.08	7.67	2.83	6.93	8.39	4.84							
CPL	0.80	1.53	5.93	11.67	6.19	1.83	4.64	6.30	3.58							
CPU	0.78	3.08	8.98	10.50	9.15	3.82	9.22	10.47	6.11							
Cpk	0.78	1.53	5.93	10.50	6.19	1.83	4.64	6.30	3.58							

CONCLUSION:OK PREPARED BY:肖金連 CHECK BY:許秀連陳本慶 APPROVED BY:張志輝

QM-TP-7310-04

Underwriters Laboratories Inc.

QMFZ2.E41429
Plastics - Component

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Plastics - Component

Guide Information

SUMITOMO BAKELITE CO LTD
5-8 HIGASHI-SHINAGAWA 2-CHOME
SHINAGAWA-KU
TOKYO 140-0002, JAPAN

E41429

									H	D	
		Min.		H	H	RTI			V	4	C
		Thk	Flame	W	A	Elec	Mech		T	9	T
Material Dsg	Color	mm	Class	I	I		Imp	Str	R	5	I
Acrylonitrile Butadiene Styrene (ABS), modified, "PERMAFLOW", furnished as pellets.											
U-101	ALL	1.5	V-1	3	0	60	60	60	2		
		3.0	V-0	1	0	60	60	60			
Acrylonitrile Butadiene Styrene (ABS), "Sumikon", furnished as pellets.											
FM-CS200	BK	1.5	HB	-	-	60	60	60			
FM-CS20A	BK	0.96	HB	-	-	60	60	60			
		-3.0	-	-	-	-	-	-			
FM-MS100XX	NC	1.0-3.0	HB	-	-	60	60	60			
Alkyd Molding Compound "Polyester" (AMC), "SUMIKON", furnished as granular, pellets.											
TM-4101	ALL	0.86	HB	3	1	105	130	130			0
		3.0	HB	0	1	105	130	130			
TM-4120	ALL	0.75	V-0	-	-	105	130	130	0	4	0
		1.1	V-0	0	1	105	130	130			

		0.32	V-0	3	0	150	150	150			
		0.51	V-0	0	0	150	150	150			
		3.0	V-0	0	1	150	150	150			
PM-9650	BK	0.81	V-1	-	-	150	150	150			
		1.5	V-0	-	-	150	150	150			
PM-9660	NC, BN, BK	0.46	V-0	-	-	150	150	150			
		0.75	V-0	-	-	150	150	150			
PM-9690	BK	0.75	V-1	-	-	150	150	150			
		1.5	V-1	-	-	150	150	150			
		3.0	V-0	-	-	150	150	150			
PM-9720	BK, BN	0.28	V-0	-	-	150	150	150	0	5	3
		0.75	V-0	2	3	150	150	150			
		1.5	V-0	0	0	150	150	150			
		3.5	V-0	0	2	150	150	150			
PM-9750	BK	0.30	V-0	-	-	150	150	150	0	4	3
	BK, BN	0.43	V-0	2	3	150	150	150			
		1.5	V-0	0	3	150	150	150			
		3.0	V-0	0	3	150	150	150			
PM-9800	BK	0.81	HB	-	-	150	150	150			
PM-9820	BK	0.16	V-0	-	-	150	150	150	0	5	3
		0.51	V-0	3	1	150	150	150			
	BN	0.18	V-0	-	-	150	150	150			
		0.70	V-0	1	2	150	150	150			
		1.5	V-0	0	2	150	150	150			
		3.0	V-0	0	2	150	150	150			
PM-9830	BK	0.69	V-0	0	0	150	150	150	0	4	3
		3.0	V-0	0	0	150	150	150			
PM-9850	BK	0.29	V-0	-	-	150	150	150			
PM-9870	BK	0.61	V-0	-	-	150	150	150			
Phenolic (PF), "SUMIKON".											
PM-6432M	BK	3.0	V-0	-	-	150	150	150			
RX-8652S	BK	1.5	V-0	-	-	150	150	150			
		3.0	V-0	-	-	150	150	150			
Phenolic (PF), furnished as pellets, granular.											
F5300F	ALL	0.81	V-0	2	0	150	150	150	4	5	3
		1.5	V-0	0	0	150	150	150			

Online Certifications Directory

OBMW2.E201757
(Systems, Electrical Insulation - Component) Magnet Wire - Component

PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD E201757
607 BAOLONG INDUSTRIAL ESTATE
LONGGANG
SHENZHEN GUANGDONG, CHINA

Mtl Dsg	Coating Type		ANSI Type	TI
	BC	TC		
UEW/U	Polyurethane	—	—	130
PEWF/U	Modified Polyester	—	MW5-C	155°C
PEWH/U	Polyester-imide	—	MW30-C	180
PEWN/U	Modified Polyester	Polyamide	MW24-C	155
HAI/U	Polyester(Amide)(Imide)	Polyamideimide	MW35, 73	200
UEWN/U	Polyurethane	Polyamide	MW 80-C	155
			MW28-C	130
UEWS/U	Polyurethane	—	MW75-C	130

Marking: Company name, material designation or marked designation on package or reel, and Recognized Component Mark.

Online Certifications Directory

OBMW2.E84201
(Systems, Electrical Insulation - Component) Magnet Wire - Component

TA YA ELECTRIC WIRE & CABLE CO LTD E84201
249 CHUNG SHAN RD, SEC 2 KUAN MIAO HSIANG
TAINAN HSIEN 71802, TAIWAN

Mtl Dsg	Coating Type			ANSI Type	Temp Class
	Base	Top	Bond		
Magnet wire coatings.					
THS4-U130	Polyurethane	—	—	MW 75	130
THB5-EI180L	ModifiedPolyester	—	—	MW 30	180
THFN-216	Polyurethane	Polyamide	—	MW 28-C	130
THLT-E155S	ModifiedPolyester	—	—	MW 5-C	155
TYKH-E155	ModifiedPolyester	—	—	MW 5-C	155
TYPU-130	Polyurethane	—	—	MW 75C	130
TYE4-1050	Polyester-imide	—	—	MW 77C	180
TY1700-U155	Polyurethane	—	—	MW 79C	155
TYA1-130	Polyurethane	—	—	MW 75	130
TY981-DAI220	Polyamide-imide	—	—	MW 81C	200
				—	220
TYPEAI-N200	Polyester- imide	Polyamide- imide	—	MW 35C,	200
			—	MW 73C	
TYSSEI-H180	Polyesterimide	—	—	MW 77C	180
				MW 74C	200
TYFPN-F155	Modified Polyester	Polyamide	—	MW 76C	180
	(amide)(imide)			MW 24C	155
TYSUN-F155	Polyurethane	Polyamide	—	MW80C	155
TYAEAIB-H180	Polyester-imide	Polyamide-imide	Polyamide	MW 102C	180

Marking: Company name and material designation.

Online Certifications Directory

See General Information for Magnet Wire - Component

OBMW2.E174837

Magnet Wire - Component

JUNG SHING WIRE CO LTD E174837

231 CHUNG CHENG RD, SEC 3

JEN-TEH HSIANG

TAINAN HSIEN 717, TAIWAN

Mtl Dsg	Mark Dsg	Coat Typ		ANSI Type	Temp Class
		BC	OC		
			Epoxy		
PEW	—	Polyester	—	—	155
PEW-2	—	Polyester	—	MW5-C	155
SF,BW@	—	Modified Polyester	—	MW26C	155
UEW-1	—	Polyurethane	—	MW2-C	105
UEW-2	—	Polyurethane	—	—	130
UEW-4#	—	Polyurethane	—	MW75C	130
UEY	—	Polyurethane	Nylon	MW28-C	130
UEY-2#	—	Polyurethane	Polyamide	MW28-C	130
SFFY-2	—	Polyurethane	Polyamide	MW80-C	155
				MW28C	130
SFFW-2	—	Polyurethane	—	MW79-C	155
SFBY-2#	—	Polyurethane	Polyamide	MW80-C	155
LSFFY	—	Polyurethane	Polyamide	MW80-C	155

Online Certifications Directory

OBJT2.E166483
(Plastic Materials and Electrical Insulation Systems - Component) Special Transformer Winding Wire - Component

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(Plastic Materials and Electrical Insulation Systems - Component) Special Transformer Winding Wire - Component

Guide Information

TOTOKU ELECTRIC CO LTD E166483
UEDA FACTORY
300 OYA
UEDA-SHI
NAGANO-KEN 386-0192, JAPAN

Cat. Nos. TIW-2X#, TIW-2SX#, reinforced insulation rated 105 C (Class A), 250 V peak for Medical and Dental Equipment, and 1400 V peak for ITE Equipment, 17-32 AWG. Suitable for use with ITE Equipment (UL 1950) and Medical and Dental Equipment (UL 2601).

Cat. Nos. TIW-4X, TIW-PIX, reinforced insulation rated 105 C (Class A), 250 V peak for Medical and Dental Equipment, and 1400 V peak for ITE Equipment, 17-32 AWG. Suitable for use with ITE Equipment (UL 1950) and Medical and Dental Equipment (UL 2601).

Cat. Nos. TIW-3X#@, TIW-3SX#@, reinforced insulation rated 105 C (Class A), 250 V peak for Medical and Dental Equipment, and 1400 V peak for ITE Equipment, 17-32 AWG. Suitable for use with ITE Equipment (UL 1950) and Medical and Dental Equipment (UL 2601).

Cat. Nos. TIW-E, 3S-ETFE, reinforced insulation rated 105 C (Class A), 250 V peak for Medical and Dental Equipment, and 1400 V peak for ITE Equipment:, 17-32 AWG. Suitable for use with ITE Equipment (UL 1950) and Medical and Dental Equipment (UL 2601).

Cat. No. SWW-2X, supplemental/basic insulation rated 105 C (Class A), 354 V peak, 29-38 AWG. Suitable for use with ITE Equipment (UL 1950).

- May be followed by LZ to denote Litz Wire.

@ - Indicates optional overcoating may be applied.

X - Shall be replaced by one to three numbers to indicate conductor size.

Online Certifications Directory

OANZ2.E17385
Insulating Tape - Component

3M COMPANY ELECTRICAL PRODUCTS DIV E17385

3M AUSTIN CENTER 6801 RIVER PLACE BLVD AUSTIN, TX 78726 USA

Aluminum foil pressure sensitive tapes, Nos. 1109, 1120, backing with conductive or nonconductive adhesive+.
Copper foil pressure sensitive tapes, Nos. 1125, 1126, backing with conductive or nonconductive adhesive+.
Flame retardant polyester film/epoxy resin composite insulating tape , No. 1(a), for use at temperatures not exceeding 130 C*.
Flame retardant polyester nonwoven/epoxy resin composite ins ulating tape, No. 10, for use at temperatures not exceeding 150 C*(a).
Flame retardant polyester film/epoxy resin composite insulating tape , No. Super 10(a), for use at temperatures not exceeding 155 C.
Flame retardant polyester nonwoven/epoxy resin composite insulating tape, No. 20+(a), for use at temperatures not exceeding 150 C*.
Flame retardant polyester film/epoxy resin composite insulating tape , No. Super 20(a), for use at temperatures not exceeding 155 C.
Polyester film/nonwoven composite insulating tape, Nos. MR94, MR94B(c), for use at temperatures not exceeding 130 C.
Polyester film/nonwoven composite insulating tape, No.44(a), 44-A(a), 44D-A(a), 44D(a), 44-18, Mil(a), 44-T(a), 44T-A(a), for use at temperatures not exceeding 130 C.
Polyester film/mat composite insulating tape, No. 55, for use at temperatures not exceeding 130 C.
Polyester film insulating tapes, Nos. 5, 54(a), 56(a), 75, 1318-1(a), 1318-2(a), 1318 clear (#)(a), 1318, MW (#)(a) for use at temperatures no exceeding 130 C.
Polyester film insulating tape, No. 1169, for use at temperatures not exceeding 130 C.
Polyester film insulating tape, Nos. 57(a), 58(a), 1291, for use at temperatures not exceeding 130 C.
Polyester film insulating tape, No. 74(a) for use at temperatures not exceeding 130 C.
Flame retardant polyester film insulating tape , Nos. 1298(b), 1298CR, 1350-1(b), 1350-2(b1), 1350CR-1 , 1350CR-2, 1350F-1(b), 1350F-2(b1), for use at temperatures not exceeding 130 C*.
Flame retardant polyester film insulating tape , Nos. 1351-1(a) and 1351-2(a), for use at temperatures not exceeding 130° C*.
Flame retardant multilayer polyethylene terepthalate film tape, Nos. 1350T-1(bb), 1350T-2(bb), 1350T-3(bb), for use as reinforced insulation at temperatures not exceeding 130 C.
Flame retardant multilayer polyethylene terepthalate film tape , Nos. 1351T-1(a) and 1351T-2(a), for use as reinforced insulation at temperatures not exceeding 130° C*.
Flame retardant polyimide film tape , Nos. 92, 1205.
Glass cloth insulating tape , No. 27(a), for use at temperatures not exceeding 150 C.
Glass cloth insulating tape , No. 79, for use at temperatures not exceeding 150 C.
Glass cloth insulating tape , No. 27U, for use at temperatures not exceeding 130 C.
Glass cloth insulating tape , No. 90, for use at temperatures not exceeding 155 C.
Flame retardant glass cloth insulating tape , No. 69(a), for use at temperatures not exceeding 200 C*.
Flame retardant acetate cloth tape , No. 1554(+).
Flame retardant acetate cloth tape , No. 1554K(+).
Cotton cloth insulating tape, No. 29, for use at temperatures not exceeding 105 C.
Glass filament reinforced polyester film insulating tape , No. 46, for use at temperatures not exceeding 130 C.
Glass filament reinforced polyester film insulating tape , No. 1339, for use at temperatures not exceeding 130 C.
Polyester filament reinforced polyester film insulating tape , No. 1312(a), for use at temperatures not exceeding 130 C.
Flame retardant copper foil tape , Nos. 1181, 1182*, 1184*.
Flame retardant copper foil tape , Nos. 1194, 1245*.
Flame retardant tin-alloy copper foil tape , No. 1183*.
Flame retardant tin-alloy copper foil tape , No. 1345*.
Flame retardant glass cloth film tapes, Nos. 69M*, 79-FR(+).
Cotton cloth tape, Cat. No. 65, rated 105 C, minimum thickness 9.2 mils.
Glass cloth tapes, Cat. No. 89, rated 130 C, minimum thickness 6.5 mils; Cat. No. 68, rated 180 C, minimum thickness 6.5 mils; Cat. No. 84, rated 155 C, minimum thickness 6.5 mils.
Polyester film glass filament tape rated 130 C, Cat. Nos. 1136, 53 minimum thickness 2.4 mils; Cat. Nos. 59, 51 minimum thickness 3.5 mils; Cat. No. 67 minimum thickness 5 mils; Cat. No. 1137 minimum thickness 5.5 mils; Cat. Nos. 1418, 19 minimum thickness 2.5 mils
Polyimide film tape , Cat. No. 1206, rated 155 C, minimum thickness 2.2 mils.
Polyimide film tape rated 180 C, Cat. No. 1093@ minimum thickness 2.5 mils; Cat. No. 73@ minimum thickness 3.5 mils.
Polyester knit tape , Cat. No. 1078, rated 130 C, minimum thickness 11 mils.
Glass reinforced polyester film tapes, Cat. Nos. 1139, 1159 for use at temperatures not to exceed 155 C; 1146 for use at temperatures not to exceed 130 C.
PET insulating tape , Cat. No. 1186, rated 130C.

Online Certifications Directory

YDPU2.E156256

Tubing, Extruded Insulating - Component

GREAT HOLDING INDUSTRIAL CO LTD E156256

10TH FL

649-3 CHUNG CHENG RD

HSIN CHUNG CITY

TAIPEI HSIEN, TAIWAN

Cat. No.	Max V	Max Temp C	Col Recognized	Max Temp Rated Oil Resistance,°C	VW-1 Rated #
Not heat-shrinkable polytetrafluoroethylene (PTFE) tubing.					
TFL	150	200	BL,NAT	—	Yes
TFT	300	200	BL,NAT	—	Yes
TFS	600	200	BL,NAT	—	Yes
TFL-201	150	200	NAT	—	Yes
TFT-201	300	200	NAT	—	Yes
TFS-201	600	200	NAT	—	Yes

#- Tubing is considered to comply with the optional VW-1 flammability requirements only if so marked.

Marking: Company name or "E156256", catalog number, voltage rating, temperature rating in degrees C and inside diameter, shall be marked on tags attached to both ends of the tubing on the shipping spool label or on the smallest unit container.

Online Certifications Directory

OBOR2.E51047

(Systems, Electrical Insulation - Component) Varnishes - Component

JOHN C DOLPH CO E51047

320 NEW RD PO BOX 267

MONMOUTH JUNCTION, NJ 08852 USA

Varnish Dsg	ANSI Magnet Wire Type	Varnish Thermal Class C		
		TP	HC	CE
AC-43,	MW28	130	130	—
AC-43-66	MW35	180	180	—
BB-353	MW35	200	180	—
BC-325	MW35	200	200	—
BC-340	MW24	155	180	—
	MW35	180	200	—
BC-346A, -346B,	MW16	240	200	—
-346AN, -346-E, BB-348,	MW24	155	180	—
BB-353, -346-HF, BC-346HF, BC-370	MW28	155	130	—
BG-346A,	MW30	180	180	—
BC-352	MW35	180	—	—
	MW16	220	—	—
BC-354	MW28	130	130	—
BC-356,	MW24	155	155	—
BC-359,	MW28	130	130	—
-359MS	MW35	180	200	—
	MW16	220	—	—
	MW76	180	180	—
BC-362	MW35	180	200	—
	MW16	220	180	—

Online Certifications Directory

OBOR2.E73071
(Systems, Electrical Insulation - Component) Varnishes - Component

P D GEORGE/VIKING E73071
5200 N 2ND ST
ST LOUIS, MO 63147 USA

Varnish Dsg	ANSI Magnet Wire Type	Varnish Thermal Class C		
		TP	HC	CE
V1630FS	MW28	130	155	—
V1630	MW35	180	180	—
	MW76	155	—	—
	MW80	155	—	—
V1630FS50	MW28	130	155	—
	MW35	180	180	—
	MW76	155	—	—
	MW80	155	—	—
V1630FS Black	MW28	130	155	—
	MW35	180	180	—
	MW76	155	—	—
	MW80	155	—	—
C1525A	MW28 &MW80	130	—	—
	MW35& MW76	180	180	—
C1525F35	MW28 &MW80	130	—	—
	MW35& MW76	180	180	—
C1525G45	MW28 &MW80	130	—	—
	MW35& MW76	180	180	—
V1380	MW28 &MW80	130	—	—
	MW35& MW76	180	180	—
V1380FC	MW28 &MW80	130	—	—
	MW35& MW76	180	180	—
V1380FC Black	MW28 &MW80	130	—	—
	MW35& MW76	180	180	—

Marking: Company name and varnish designation on shipping container.

ONLINE CERTIFICATIONS DIRECTORY

QMFZ2.E304477
Plastics - Component

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Plastics - Component

See General Information for Plastics - Component

DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY E304477
XIANG XI INDUSTRIAL PARK
SHI PAI TOWN
DONG GUAN, GUANGDONG 523345 CHINA

									HI	D	
		Min.		HI	HI	RTI			V	4	C
		Thk	Flame	W	A	Elec	Mech		T	9	T
Material Dsg	Color	mm	Class	I	I		Imp	Str	R	S	I
Epoxy Potting Compound (EP - Potting), furnished as paste.											
808A/B, H907 @@											
	BK	1.0	V-0	-	-	90	90	90			
		3.0	V-0	-	-	90	90	90			
		5.0	V-0	-	-	90	90	90			

@@ - H907 is an alternate designation of 808A/B.

Marking: Company name and material designation on container, wrapper or finished part.
Last Updated on 2007-01-16

Questions? Notice of Disclaimer Page Top

Enclosure No. 5
Additional Test Data

Additional tests acc. to IEC 60065/EN60065:2001 + A1:2006

(64 pages including this cover page)

Additional tests were also conducted in compliance with IEC 60065/EN60065:2001 + A1: 2006

Summary of testing:

The sample(s) tested complies with the requirements of IEC 60065: 2001 + A1: 2005 and EN 60065: 2002 + A1:2006.

Compliance with the National requirements of "(countries)" as given in CB Bulletin "(112A)" was also

Clause	Requirement	Tested
5	Marking test	P
5.1	Input test	P
7.1	Heating test	P
9.1.1.1	Determination of hazardous live parts	P
9.1.1.2	Test finger	P
9.1.6	Plug discharge test	P
9.1.7	External force - rigid test finger and test hook	P
10.1	Surge test	P
10.2	Humidity treatment test	P
10.3	Insulation resistance test	P
10.3	Dielectric strength test	P
11	Fault conditions test	P
12.1.2	Vibration test	P
12.1.3	Impact test	P
12.1.4	Drop test	P
12.1.5	Stress relief test	P
13	Creepage and Clearance Distances	P
13.2	Determination of operating voltage test	P
14.2	Capacitors and RC Units	P
14.11	Optocouplers	P
14.12	Surge Suppression Varistors	P
15.2	Protective Earthing	P
17.1	Electrical Connections and Mechanical Fixings	P
20	Resistance to Fire	P

9.1.1.1a	TABLE: A) ELECTRIC SHOCK HAZARD UNDER NORMAL OPERATING CONDITIONS	P

Model	Condition	Voltage						Limited	
		L→output terminals		N→output terminals		Between different polarity of output terminals			
		A	B	A	B	A	B	A	B
	Open-circuit	338Vpk	338Vpk	1,97Vpk	1,97Vpk	48Vdc	48Vdc	35Vac or 60Vdc	70Vac or 120Vdc

Input voltage: 240Vac/60Hz

Remark: 1). A - under normal conditions. B - under fault conditions.
2). if open-circuit voltage exceeds 35Vac or 60Vdc, then do Touch current test, see condition b.

9.1.1.1a	TABLE: Touch current			P
Parts tested	Input	Measured voltage (U2)	Calculated current (mA)	Comments/ Verdict
L/N to enclosure with metal foil	264 Vac / 60 Hz	--	0,001	P
L/N to +/- output	264 Vac / 60 Hz	--	0,64	P

Comments: The measured touch current did not exceed 0,7 mA.

10.1	TABLE: voltage surge	P
test voltage applied between:	test voltage (V)	breakdown
Input to Output	10k	No

10.1	TABLE: insulation resistance after voltage surge	P
test voltage applied between:		
Between mains poles (F1 disconnected)	R (MΩ)	Required R (MΩ)
Between parts separated by basic or supplementary insulation (L/N to earth)	>9999	2
Between parts separated by double or reinforced insulation (L/N to Enclosure with foil)	>9999	2
Between parts separated by double or reinforced insulation (L/N to SELV)	>9999	4

10.1	TABLE: electric strength after voltage surge	P

test voltage applied between:	test voltage (V)	breakdown
Between mains poles (F1 disconnected)	AC 1500V	No
Between parts separated by basic or supplementary insulation (L/N to earth)	AC 1500V	No
Between parts separated by double or reinforced insulation (L/N to Enclosure with foil)	AC 3000V	No
Between parts separated by double or reinforced insulation (L/N to SELV)	AC 3000V	No

10.2	TABLE: humidity treatment	P

Test condition	Temperature	Relative Humidity	Duration
	40(°C)	93%	120 hours

10.3	TABLE: insulation resistance measurements	P

Insulation resistance R between:	R (MΩ)	Required R (MΩ)
Between mains poles (F1 disconnected)	>9999	2
Between parts separated by basic or supplementary insulation (L/N to earth)	>9999	2
Between parts separated by double or reinforced insulation (L/N to Enclosure with foil)	>9999	4
Between parts separated by double or reinforced insulation (L/N to SELV)	>9999	4

10.3	TABLE: electric strength measurements	P

Test voltage applied between:	Test voltage (V)	Breakdown
For Unit		
Between mains poles (F1 disconnected)	AC 1500V	No
Between parts separated by basic or supplementary insulation (L/N earth)	AC 1500V	No
Between parts separated by double or reinforced insulation (L/N to Enclosure with foil)	AC 3000V	No
Between parts separated by double or reinforced insulation (L/N to SELV	AC 3000V	No
For Transformer (T1)		
Primary to secondary (reinforced)	AC 3000V	No
Secondary to core (reinforced)	AC 3000V	No
1 Layer Insulation tape 1350F-1, 1350T-1	AC 3000V	No
Mylar sheet	AC 3000V	No

12.1.2	TABLE: VIBRATION TEST FOR PORTABLE APPARATUS	P
Duration: 30min Amplitude: 0,35mm Frequency range: 10-55-10Hz Sweep rate: 1oct./min		
After the test no damage observed.		

12.1.3	TABLE: IMPACT HAMMER TEST		P
Applied part	Forces	Time	Result
Enclosure top	0.5J	3	No damage
Enclosure bottom	0.5J	3	No damage
Steel ball test with Impact 2J was performed on same spots with same results. Sample was also three times dropped from 1m height with same result. No damage observed			

For all other required measurements and tests, please refer to appropriate clause in the main Test report

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

IEC 60065, 7th ed. + A1
(EN 60065: 2002 + A1: 2006)

GROUP DIFFERENCES, NATIONAL DEVIATIONS AND SPECIAL NATIONAL CONDITIONS IN THE CENELEC COUNTRIES

C = CENELEC COMMON MODIFICATIONS
S = SPECIAL NATIONAL CONDITIONS
A = A-DEVIATIONS (NATIONAL DEVIATIONS)

	CONTENTS C: **Add** the following annexes: Annex ZA (normative) Other international publications quoted in this standard with the references of the relevant European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations		P
3.1	C: **Add** the following indent at the end of the list: - exposure to excessive sound pressures from headphones or earphones. NOTE A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		N/A
4.1.1	C: **Replace** the text of the note by: NOTE For ROUTINE TEST reference is made to EN 50333.		P
5.1 i)	C: **Replace** the note by: NOTE For RATED POWER CONSUMPTION measurements of TVs reference is made to EN 62087. Measurements are done in the ON (play) operating mode.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
5.4.1	**Add** the following indent: za) A warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
6.1	C: **Replace** the subclause by: **6.1 Ionizing radiation** *Equipment that might produce ionizing radiation is checked by measuring the amount of radiation. The amount of radiation is determined by means of a radiation monitor of the ionizing chamber type with an effective area of 1 000 mm^2 or by measuring equipment of other types giving equivalent results.* *Measurements are made with the equipment on test operating at the most unfavourable supply voltage (see 4.2) and with operator controls and service controls adjusted so as to give maximum radiation whilst maintaining the equipment operative for normal use.* *Internal preset controls not intended to be adjusted during the lifetime of the equipment are not considered to be service controls.* *At any point 100 mm from the surface of the operator access area, the dose-rate shall not exceed 1 µSv/h (0,1 mR/h) (see Note). Account shall be taken of the background level.* NOTE These values appear in Directive 96/29/Euratom.		N/A
13.3.1	C: **Delete** note 4.		P
14	C: **Delete** note 4 and note 5.		P
15.1.1	C: **Delete** note 1 and note 2.		P
15.2	C: **Delete** note 2.		N/A
16.1	C: **Delete** note 1.		N/A
16.2	C: **Delete** the note.		N/A
20	C: **Delete** note 2.		P

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
Annex B	C: **Replace** note 1 by: In the CENELEC countries listed in IEC 62151, special national conditions apply.		N/A
Annex G	C: **Delete** the note.		P
Annex J.2	C: **Delete** the notes of Table J.1		N/A
Annex N	C: **Add** after the introduction: For ROUTINE TEST reference is made to EN 50333.		P
Biblio-graphy	C: **Add** the following standards: EN 50332-1:2000, *Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 1: General method for "one package equipment".* EN 50332-2:2003, *Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Matching of sets with headphones if either or both are offered separately.*		P

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
(cont.)	C: **Add** the following notes for the standards indicated: IEC 60130 NOTE Parts 9 and 17:1998 are harmonized as ENs (not modified). IEC 60169 NOTE Partly harmonized in the EN 60169/HD 134 series (not modified). IEC 60173 NOTE Harmonized as HD 27 S1:1978 (not modified). IEC 60335-2-56 NOTE Harmonized as EN 60335-2-56:1997 (not modified). IEC 60335-2-82 NOTE Harmonized as EN 60335-2-82:2000 (not modified). IEC 60695 NOTE Harmonized as EN 60695 series (not modified). IEC 61040 NOTE Harmonized as EN 61040:1992 (not modified). IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1:1997 (not modified). IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4:1997 (not modified). IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6:1997 (not modified). IEC 60598-2-9 NOTE Harmonized as EN 60598-2-9:1989 + A1:1994 (not modified). IEC 60598-2-17 NOTE Harmonized as EN 60598-2-17:1989 + A2:1991 (not modified).		P

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

Annex ZA (normative)

C: **Other international publications quoted in this standard with the references of the relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international standard has been modified by common modification, indicated by (mod), the relevant EN/HD applies.

Publication	**Date**	**Title**	**EN/HD**	**Date**
—	—	Audio, video and similar electronic apparatus – Routine electrical safety testing in production	EN 50333	2001
IEC 60027	series	Letter symbols to be used in electrical technology	HD 245	series
IEC 60038 (mod)	1983	IEC standard voltages [1)]	HD 472 S1	1989
IEC 60068-2-3	1969	Environmental testing Part 2: Tests – Test Ca: Damp heat, steady state	HD 323.2.3 S2 [2)]	1987
IEC 60068-2-6	1995	Part 2: Tests – Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995
+corr. March	1995			
IEC 60068-2-32	1975	Part 2: Tests – Test Ed: Free fall	EN 60068-2-32 [3)]	1993
IEC 60068-2-75	1997	Part 2: Tests – Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60085	1984	Thermal evaluation and classification of electrical insulation	HD 566 S1	1990
IEC 60107	series	Methods of measurement on receivers for television broadcast transmissions	EN 60107	series
IEC 60112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
IEC 60127	series	Miniature fuses	EN 60127	series
IEC 60167	1964	Methods of test for the determination of the insulation resistance of solid insulating materials	HD 568 S1	1990

Verdict: P

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

(cont.)	IEC 60216	series	Guide for the determination of thermal endurance properties of electrical insulating materials	HD 611/ EN 60216	series	P
	IEC 60227 [4)]	series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	HD 21	series	
	IEC 60245 [5)]	series	Rubber insulated cables - Rated voltages up to and including 450/750 V	HD 22	series	
	IEC 60249-2	series	Base materials for printed circuits Part 2: Specifications	EN 60249-2	series	
	IEC 60268-1	1985	Sound system equipment Part 1: General	HD 483.1 S2 [6)]	1989	
	IEC 60317	series	Specifications for particular types of winding wires	EN 60317	series	
	IEC 60320	series	Appliance couplers for household and similar general purposes	EN 60320	series	
	IEC 60335-1(mod)	2001	Safety of household and similar electrical appliances Part 1: General requirements	EN 60335-1	— [7)]	
	IEC 60384-1	1982	Fixed capacitors for use in electronic equipment Part 1: Generic specification	EN 130000 [8)]	1993	
	IEC 60384-14 A1	1993 1995	Fixed capacitors for use in electronic equipment Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 132400 [9)]	1994	
	IEC 60417	series	Graphical symbols for use on equipment	EN 60417	series	
	IEC 60454	series	Specifications for pressure-sensitive adhesive tapes for electrical purposes	EN 60454	series	
	IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993	
	IEC 60664-1(mod)	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	HD 625.1 S1 + corr. November	1996 1996	

IEC/EN 60065						
Clause	Requirement – Test			Result - Remark		Verdict
(cont.)	IEC 60664-3	1992	Part 3: Use of coatings to achieve insulation coordination of printed board assemblies	HD 625.3 S1	1997	P
	IEC 60691	1993	Thermal links – Requirements and application guide	EN 60691 [10)]	1995	
	IEC 60695-2-2	1991	Fire hazard testing Part 2-2: Test methods – Needle-flame test	EN 60695-2-2	1994	
	IEC 60695-11-10	1999	Part 11-10: Test flames – 50 W horizontal and vertical flame test methods	EN 60695-11-10	1999	
	IEC 60707	1999	Flammability of solid non-metallic materials when exposed to flame sources – List of test methods	EN 60707	1999	
	IEC 60730 (mod)	series	Automatic electrical controls for household and similar use	EN 60730	series	
	IEC 60825-1	1993	Safety of laser products Part	EN 60825-1	1994	
	corr. December	1994	1: Equipment classification,	+ corr. February	1995	
	A1	1997	requirements and user's	+ A11	1996	
			guide	+ corr. July	1997	
	A2	2001		A2	2001	
	IEC 60851-3	1996	Winding wires – Test methods Part 3: Mechanical properties	EN 60851-3	1996	
	IEC 60851-5	1996	Part 5: Electrical properties	EN 60851-5	1996	
	IEC 60851-6	1996	Part 6: Thermal properties	EN 60851-6	1996	
	IEC 60884	series	Plugs and socket-outlets for household and similar purposes	—	—	
	IEC 60885-1	1987	Electrical test methods for electric cables Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750 V	—	—	
	IEC 60906	series	IEC system of plugs and socket-outlets for household and similar purposes	—	—	
	IEC 60950 (mod)	1999	Safety of information	EN 60950 [11)]	2000	
	+ corr. January	2000	technology equipment	+ corr. February	2002	

IEC/EN 60065						
Clause	Requirement – Test			Result - Remark		Verdict
(cont.)	IEC 60990	1999	Methods of measurement of touch-current and protective conductor current	EN 60990	1999	P
	IEC 60998-2-2	1991	Connecting devices for low-voltage circuits for household and similar purposes Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units	EN 60998-2-2	1993	
	IEC 60999-1	1999	Connecting devices – Safety requirements for screw-type and screwless-type clamping units Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm^2 up to 35 mm^2 (included)	EN 60999-1	2000	
	IEC 61032	1997	Protection of persons and equipment by enclosures Probes for verification	EN 61032	1998	
	IEC 61051-2	1991	Varistors for use in electronic equipment Part 2: Sectional specification for surge suppression varistors	—	—	
	IEC 61058-1	1996	Switches for appliances Part 1: General requirements	— 12)	—	
	IEC/TR2 61149	1995	Guide for safe handling and operation of mobile radio equipment	—	—	
	IEC 61260	1995	Electroacoustics – Octave-band and fractional-octave-band filters	EN 61260	1995	
	IEC 61293	1994	Marking of electrical equipment with ratings related to electrical supply – Safety requirements	EN 61293	1994	
	IEC 61558-1(mod) A1	1997 1998	Safety of power transformers, power supply units and similar Part 1: General requirements and tests	EN 61558-1 A1	1997 1998	

IEC/EN 60065						
Clause	Requirement – Test			Result - Remark		Verdict
(cont.)	IEC 61558-2-17	1997	Part 2-17: Particular requirements for transformers for switch mode power supplies	EN 61558-2-17	1997	P
	IEC 61965	2000	Mechanical safety of cathode ray tubes	EN 61965	2001	
	IEC 62151	2000	Safety of equipment electrically connected to a telecommunication network	—	—	
	IEC Guide 104	1997	The preparation of safety publications and the use of basic safety publications and group safety publications	—	—	
	ISO 262	1973	ISO general purpose metric screw threads – Selected sizes for screws, bolts and nuts	—	—	
	ISO 306	1994	Plastics – Thermoplastic materials determination of Vicat softening temperature (VST)	—	—	
	ISO 7000	1989	Graphical symbols for use on equipment – Index and synopsis	—	—	
	ITU-T Recommendation K.17	1988	Tests on power-fed repeaters using solid-state devices in order to check the arrangements for protection from external interference	—	—	
	ITU-T Recommendation K.21	1996	Resistibility of subscriber's terminal to overvoltages and overcurrents	—	—	
	1) The title of HD 472 S1 is: Nominal voltages for low voltage public electricity supply systems. 2) HD 323.2.3 S2 includes A1:1984 to IEC 60068-2-3. 3) EN 60068-2-32 includes A2:1990 to IEC 60068-2-32. 4) The HD 21 series is related to but not directly equivalent to the IEC 60227 series. 5) The HD 22 series is related to but not directly equivalent to the IEC 60245 series. 6) HD 483.1 S2 includes A1:1988 to IEC 60268-1. 7) to be published. 8) EN 130000:1993 (which was related to but not directly equivalent to IEC 60384-1:1982) is superseded by EN 60384-1:2001, which is based on IEC 60384-1:1999, mod. 9) EN 132400:1994 is related to but not directly equivalent to IEC 60384-14:1993 + A1:1995. 10) EN 60691 includes A1:1995 to IEC 60691. 11) EN 60950 is superseded by EN 60950-1:2001 (IEC 60950-1:2001, mod.). 12) IEC 61058-1:2000 + A1:2001, mod., are harmonized as EN 61058-1:2002.					

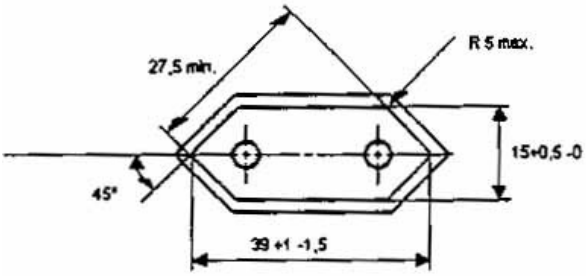
IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

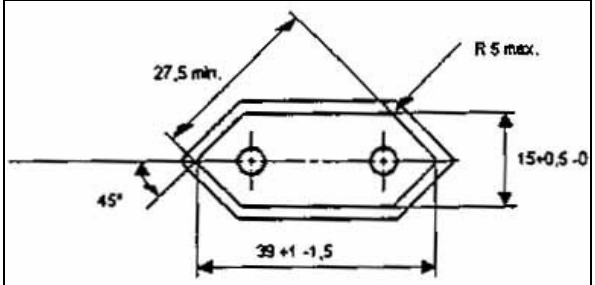
Annex ZB (normative)
Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

2.6.1	**Denmark** The following is added: Certain types of Class I apparatus, see 15.1.1, may be provided with a plug not establishing earthing continuity when inserted in Danish socket-outlets *Justification:* Heavy Current Regulations, Section 107.	Appliance inlet	P
13.3.1	**Norway** To the second paragraph the following is added: In Norway, due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230 V in case of a single earth fault. *Justification:* Based on a use in Norway of an IT power distribution system where the neutral is not provided.		P
15.1.1	**Denmark** To the first paragraph the following is added: In Denmark, supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-D1.	No supply cords	N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	Denmark Appliances of Class I provided with socket-outlets with earth contact or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with the Heavy Current Regulations, Section 107-2-D1 standard sheet DK 2-1a.	No socket outlets	N/A
	Denmark To the second paragraph the following is added: Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall have the following dimensions:  Dimensions in mm Other dimensions shall be in compliance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DKA 1-3 for portable socket outlets. Shutters are not required.	Class I	N/A
	Denmark To the third paragraph the following is added: Mains socket-outlets with earthing contact shall be in compliance with Heavy Current Regulations Section 107-2-D1, Standard sheet DK 1-3a, DK 1-5a or DK 1-7a *Justification*: Heavy Current Regulations, Section 107.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	Ireland Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, “13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997”. *Justification*: SI 525: 1997		N/A
	Norway Mains socket-outlets mounted on Class II apparatus shall comply with the specifications given in CEE Publ. 7 as far as applicable, with the following amendments: § 8 Dimensions a 2,5 A 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I. STANDARD SHEET I 2,5 A/ 250 V SOCKET-OUTLET FOR ELECTRONIC APPLIANCES OF CLASS II  Dimensions in mm Other dimensions according to CEE Publication 7 Standard Sheet 1 “Portable Single-Way Socket-Outlets” § 24 Mechanical strength a 2,5 A, 250 V socket-outlets for Class II electronic apparatus are tested as specified in 12.1.3 of EN 60065. Also the protecting rim shall be tested. *Justification*: Act of 24 May 1929 relating to supervision of electrical installation (TEA 1929/FEL 1998).		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	United Kingdom Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug shall be fitted with a “standard plug” in accordance with Statutory Instrument 1768: 1994: The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those Regulations. NOTE “Standard plug” is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug. *Justification*: SI 1768: 1994		N/A
	Norway Method b) of 8.1 is not permitted. Double or reinforced insulation is required between parts connected to the mains and parts connected to the public telecommunications network		N/A
J.2	**Norway** After Table J.1 the following is added: In Norway, due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230 V in case of a single earth fault. *Justification:* Based on a use in Norway of an IT power distribution system where the neutral is not provided.		P

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
Annex B	**Finland** Replace NOTE 1 by In the CENELEC countries listed in IEC 62151, special national conditions apply. Add the following: All subclauses given below are subclauses of IEC 62151:2000 (ref. Corrigendum 1 and 2 to IEC 62151). Subclause 4.1.1 (Corrigendum 2): Add after the first paragraph: NOTE - In Finland, Class I equipment which is intended for connection to the building installation via a non-industrial plug or a non-industrial appliance coupler, or both and in addition is intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and ACCESSIBLE parts, have a marking stating that the equipment must be connected to an earthed mains socket -outlet. The marking text shall be as follows: “Laite on liitettava suojamaadoituskoskettimilla varustettuun pistorasiaan” Subclause 5.3.1 (Corrigendum 1): Add after the first test specifications paragraph: NOTE 1 In Finland, Norway and Sweden, there are additional requirements for the insulation. Renumber the existing note as note 2. For additional requirements for the insulation in Sweden in the NOTE 1 the following text is added between the first and second paragraph (this text is identical to the text in EN 60950-1:2001): If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
(cont.)	If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in the accordance with the compliance clause below and in addition: - passes the test and inspection criteria of 13.6 with an electric strength test of 10.3 using the test voltage of 1,5 kV multiplied by 1,6, and - is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV (for performance of the test see N.2.1). It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2. A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an Impulse test of 2.5 kV defined in IEC 62151, subclause 6.2.1; - the additional testing shall be performed on all the test specimens as described in IEC 60384-14; - the Impulse test of 2.5 kV is to be performed before the Endurance Test in IEC 60384-14 in the sequence of tests as described in IEC 60384-14. Subclause 5.3.2 (Corrigendum 1): Add after the fourth dash: NOTE - In Norway, exclusions are applicable for equipment which is intended for connection to the building installation wiring using screw terminals or other reliable means, and for equipment which is intended for connection to the building installation wiring via an industrial plug and socket -outlet or an appliance coupler, or both, complying with IEC 60309 or with a comparable national standard.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	Norway Replace NOTE 1 by In the CENELEC countries listed in IEC 62151, special national conditions apply. Add the following: All subclauses given below are subclauses of IEC 62151:2000 (ref. Corrigendum 1 and 2 to IEC 62151). Subclause 4.1.1 (Corrigendum 2): Add after the first paragraph: NOTE - In Norway, Class I equipment which is intended for connection to the building installation via a non-industrial plug or a non-industrial appliance coupler, or both and in addition is intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and ACCESSIBLE parts, have a marking stating that the equipment must be connected to an earthed mains socket -outlet. The marking text shall be as follows: "Apparatet skal tilkoples jordet stikkontakt" Subclause 5.3.1 (Corrigendum 1): Add after the first test specifications paragraph: NOTE 1 In Finland, Norway and Sweden, there are additional requirements for the insulation. Renumber the existing note as note 2. For additional requirements for the insulation in Sweden in the NOTE 1 the following text is added between the first and second paragraph (this text is identical to the text in EN 60950-1:2001): If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
(cont.)	If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in the accordance with the compliance clause below and in addition: - passes the test and inspection criteria of 13.6 with an electric strength test of 10.3 using the test voltage of 1,5 kV multiplied by 1,6, and - is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV (for performance of the test see N.2.1). It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2. A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an Impulse test of 2.5 kV defined in IEC 62151, subclause 6.2.1; - the additional testing shall be performed on all the test specimens as described in IEC 60384-14; - the Impulse test of 2.5 kV is to be performed before the Endurance Test in IEC 60384-14 in the sequence of tests as described in IEC 60384-14. Subclause 5.3.2 (Corrigendum 1): Add after the fourth dash: NOTE - In Norway, exclusions are applicable for equipment which is intended for connection to the building installation wiring using screw terminals or other reliable means, and for equipment which is intended for connection to the building installation wiring via an industrial plug and socket -outlet or an appliance coupler, or both, complying with IEC 60309 or with a comparable national standard.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	Sweden Replace NOTE 1 by In the CENELEC countries listed in IEC 62151, special national conditions apply. Add the following: All subclauses given below are subclauses of IEC 62151:2000 (ref. Corrigendum 1 and 2 to IEC 62151). Subclause 4.1.1 (Corrigendum 2): Add after the first paragraph: NOTE - In Sweden, Class I equipment which is intended for connection to the building installation via a non-industrial plug or a non-industrial appliance coupler, or both and in addition is intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and ACCESSIBLE parts, have a marking stating that the equipment must be connected to an earthed mains socket -outlet. The marking text shall be as follows: “Apparaten skall anslutas till jordat uttag” Subclause 5.3.1 (Corrigendum 1): Add after the first test specifications paragraph: NOTE 1 In Finland, Norway and Sweden, there are additional requirements for the insulation. Renumber the existing note as note 2. For additional requirements for the insulation in Sweden in the NOTE 1 the following text is added between the first and second paragraph (this text is identical to the text in EN 60950-1:2001): If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
(cont.)	If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in the accordance with the compliance clause below and in addition: - passes the test and inspection criteria of 13.6 with an electric strength test of 10.3 using the test voltage of 1,5 kV multiplied by 1,6, and - is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV (for performance of the test see N.2.1). It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2. A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an Impulse test of 2.5 kV defined in IEC 62151, subclause 6.2.1; - the additional testing shall be performed on all the test specimens as described in IEC 60384-14; - the Impulse test of 2.5 kV is to be performed before the Endurance Test in IEC 60384-14 in the sequence of tests as described in IEC 60384-14. Subclause 5.3.2 (Corrigendum 1): Add after the fourth dash: NOTE - In Sweden, exclusions are applicable for equipment which is intended for connection to the building installation wiring using screw terminals or other reliable means, and for equipment which is intended for connection to the building installation wiring via an industrial plug and socket -outlet or an appliance coupler, or both, complying with IEC 60309 or with a comparable national standard.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

Annex ZC (informative)

A-deviations

A-deviation: A national deviation due to regulations, the alteration of which – at least for the time being – outside the competence of the CEN/CENELEC member.

5.1	**Italy** The following requirements shall be fulfilled: - The power consumption in Watts (W) shall be indicated on TV receivers and in their instruction for use (Measurement according to EN 60555-2). NOTE EN 60555-2 has since been replaced by IEC 60107-1:1997. - TV receivers shall be provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language. - Marking for controls and terminals shall be in Italian language. Abbreviation and international symbols are allowed provided that they are explained in the instruction for use. - The ECC manufacturers are bound to issue a conformity declaration according to the above requirements in the instruction manual. The correct statement for conformity to be written in the instruction manual, shall be: Questo apparecchio è fabbricato nella CEE nel rispetto delle disposizioni del D.M. marzo 1992 ed è in particolare conforme alle prescrizioni dell'art. 1 dello stesso D.M. - The first importers of TV receivers manufactured outside EEC are bound to submit the TV receivers for previous conformity certification to the Italian Post Ministry (PP.TT). The TV receivers shall have on the backcover the certification number in the following form: D.M. 26/03/1992 xxxxx/xxxxx/S or T or pT S for stereo T for teletext pT for retrofitable teletext *Justification:* Ministerial Decree of 26 March 1992: National rules for television receivers trade. NOTE The ministerial decree above contains additional, but not safety relevant requirements.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
6.1	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification*: German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de		N/A
14	**Sweden** The following is added: Switches containing mercury such as thermostats, relays and level controllers are not allowed. *Justification:* Ordinance (1990:944) on Prohibition in Connection with Handling, Importation and Exportation of Chemical Products (Certain Cases).		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

	National Differences Australia (AU) **IEC 60065, 7th ed. + A1**	

Annex ZZ **(normative)** **Variations to IEC 60065:2001 for application in Australia and New Zealand**			P
ZZ.1 Introduction This Annex sets out variations between this Standard and IEC 60065:2001. These variations indicate national variations for purposes of the IECEE CB Scheme and will be published in the IECEE CB Bulletin. These variations are indicated within the body of the Standard by shading and strikethrough.			P
ZZ.2 Variations The variations are as follows: Clause			P
7.1.5	In Table 3 under item c) add an h) in both columns against 'thermoplastic materials' and add the following new footnote: h) As an alternative to the method described in footnote f) the following variation may be used where there is any doubt about the suitability of the material: The ball-pressure test described in AS/NZS 60695.10.2 may be carried out. To assess compliance under normal operating conditions, the test shall be made in a heating cabinet at a temperature of 40 °C ±2 °C plus the maximum temperature rise determined under normal operating conditions but, it shall be at least - for external parts 75 °C ±2 °C - for materials supporting parts conductively connected to the mains 125 °C ±2 °C		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
7.2	After the second paragraph, add the following: The alternative method described in footnote h) of Table 3 may be used.		N/A
15.1.1	After the second paragraph, add the following: Plugs for the connection of apparatus to mains-powered socket-outlets shall comply with AS/NZS 3112 or AS/NZS 3123. Apparatus with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements of AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
15.3.5	In Table 15, in the second and third rows of the first column replace ‘6’ with ‘7.5’.		N/A
16.2	In Table 18, in the second and third rows of the first column replace ‘6’ with ‘7.5’.		N/A
16.3	In item (b), add the following: A flexible cord complying with AS/NZS 3191 need not undergo this test.		N/A
20	Add the following after NOTE 2: For alternative test refer to Clause 20.201.		N/A
20.1.4	In Table 21, in the third and fourth columns change both ‘HB75’ and ‘No requirement’ to ‘V-1’.		P
20.2.3	After this Clause, add the following variation: 20.201 Resistance to fire – Alternative tests		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
20.201.1	General Parts of non-metallic material shall be resistant to ignition and the spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: - small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1 750 mm^3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1 or better according to AS/NZS 60695.11.10. NOTE – In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another. Compliance shall be checked by the tests of 20.201.2.1, 20.201.2.2. and 20.201.2.3. For the base material of printed boards, compliance shall be checked by the test of 20.201.2.4. The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, they are placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A
20.201.2	Tests		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
20.201.2.1	Testing of non-metallic parts Part of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550 °C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall not be carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.		N/A
20.201.2.2	Testing of insulated parts Part of insulating material supporting potential ignition sources shall be subject to the glow-wire test of AS/NZS 64695.2.11 which shall be carried out at 750 °C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE – Contacts in components such as switch contacts are considered to be connections. For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested. The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications:		N/A

Clause of AS/NZS 4695.2.2	**Change**
5 Severities	*Replace* with: The duration of application of the test flame shall be 30 s ± 1 s.

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Clause	Requirement – Test	Result - Remark	Verdict
(cont.)	8 Test procedure 8.2 *Replace* the first sentence with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. 8.4 The first paragraph does not apply. Addition: If possible, the flame shall be applied at least 10 mm from a corner. 8.5 *Replace* with: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test. 10 Evaluation of test results *Replace* with: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s. The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10 provided that the sample tested was not thicker than the relevant part.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
20.201.2.3	Testing by needle-flame test If parts, other than enclosures, do not withstand the glow wire tests of 20.201.2.2, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 20.201.2.2 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 20.201.2.2. Parts shielded by a separate barrier which meets the needle-flame test shall not be tested. NOTE 1 – If the enclosure does not withstand the glow-wire test the appliance is considered to have failed to meet the requirements of Clause 21.201 without the need for consequential testing. NOTE 2 – If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the apparatus, the apparatus is considered to have failed to meet the requirements of Clause 21.201 without the need for consequential testing. NOTE 3 – Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
20.201.2.4	Testing of printed boards The base material of printed boards shall be subject to the needle-flame test of Clause 21.201.2.3. The flame shall be applied to the edge of the board where the heatsink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source. The test is not carried out if the— - printed board does not carry any potential ignition source; - base material of printed boards, on which the available power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or - base material of printed boards, on which the available power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. Compliance shall be determined using the smallest thickness of the material. NOTE – Available power is the maximum power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the power for more than 2 min when the circuit supplied is disconnected.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
21.201.3	For open circuit voltages greater than 4 kV potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a fire enclosure which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		N/A
Annex B	After the heading add: For Australia only, this Annex is replaced by the requirements of the Telecommunications Labelling Notice issued under the Telecommunications Act. NOTE – The Telecommunications Act is administered by the Australian Communications Authority.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

	National Differences China (CN) **IEC 60065, 5th ed. + Amds 1, 2 and 3**	

4.2.1	first sentence replaced by: The apparatus is connected to a supply voltage of 0.9 times or 1.1 times of any RATED SUPPLY VOLTAGE for which the apparatus is designed.		P
5.1f)	Second paragraph replaced by: ……When single rated voltage is given, it should be marked 220 V, For a rating range, it should cover 220 V; when multiple RATED VOLTAGES are given, one of them must be 220 V and also factory default setting should be 220 V.	100-240V	P
5.4	replaced by： When information with regard to safety is required according to this standard, this information shall be given in an instruction for installation or use and supplied with the apparatus. This information shall be given in simplify Chinese where the apparatus is intended to be used.	Should be evaluated when subjected to national approval	N/A
15.1.1	first sentence replaced by: Plugs and appliance couplers for the connection of the apparatus to the MAINS and socket-outlets and interconnection couplers for providing MAINS power to other apparatus shall comply with the Chinese National standards, Industrial standards or relevant IEC standards for plugs and socket-outlets, appliance couplers or interconnection couplers.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

	National Differences Japan (JP) **IEC 60065, 6th ed.**	

5.1	**Addition:** Ad the following to Sub-clause 5.1 as Sub-clause 5.1.j) j) Rated power consumption or rated current consumption for apparatus intended for connection to A.C. mains. The measured value at the rated voltage shall be equal or less than 110 % of the marked value.	Complied	*P*
5.4.101	**Addition:** With regard to devices for disconnection from the MAINS, instructions shall state that a) where the MAINS plug is used as the disconnect device, such disconnect device shall remain readily operable; b) where an all-pole MAINS SWITCH is used as the disconnect device, the location on the apparatus and the function of the switch shall be described. *c)* for PERMANENTLY CONNECTED APPARATUS provided neither with an all-pole MAINS SWITCH nor an all-pole circuit-breaker, the installation shall be provided with an all-pole MAINS SWITCH or an all-pole circuit-breaker with a contact separation of at last 3 mm and these devices shall interrupt all phase conductors simultaneously except for the protective earth.	Appliance inlet is considered as disconnect device	*P*

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
(cont.)	Where marking, signal lamps or similar means might give the impression that the apparatus is completely disconnected from the MAINS, information that states clearly the correct situation shall be included. If symbols are used, their meaning shall also be explained. Marking of the off-position by the relevant symbol "O" (IEC 61417-5008) is permitted only for an all-pole MAINS SWITCH that interrupts all poles of the MAINS supply. *Compliance is checked by visual inspection.*		*P*
5.4.2	**Deletion:** Delete this clause.		N/A
7.1.5	**Addition:** Add the following in Note 4 of Table 2. For materials which are not listed in Table 2, temperature rises in the normal operating conditions are considered satisfactory if these materials comply with Japanese requirements. (Refer to the Attachment 1 of Japanese differences for current IEC 60335-1; 3rd edition in CB Bulletin 101B.) Permissible temperature rise of "Supply cords and wiring insulation" is applicable only to the materials used in supply cords complying with IEC 60227 or IEC 60245. Materials used in other wiring shall comply with Japanese requirements. (Refer to the Attachment 1 of Japanese differences for current IEC 60335-1; 3rd edition in CB Bulletin 101B.)		*P*
8.101	**Addition:** The title "Disconnection from the MAINS" is added.		*P*

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
8.101	**Addition:** When the apparatus is designed to be fed from the MAINS, a disconnect device shall be provided to isolate the apparatus from the MAINS. Note 1: The disconnect device is necessary for servicing and useful for users. The disconnect device shall have a contact separation of at least 3 mm and interrupt all poles simultaneously. Note 2: The following are examples of disconnect devices. - the MAINS plug, - an appliance coupler, - an all-pole MAINS SWITCH, - an all-pole circuit – breaker. Where the MAINS plug or appliance coupler is used as the disconnect device, instructions for use shall comply with Sub-clause 5.4.101a). PERMANENTLY CONNECTED APPARATUS shall be provided with an all-pole MAINS SWITCH or an all-pole circuit – breaker unless the apparatus complies with Sub-clause 5.4.101c). *Compliance is checked by visual inspection and measurement.*	Appliance coupler	*P*
8.101.2	**Addition:** For apparatus on which a MAINS SWITCH is used as a disconnect device, the on-position of the switch shall be indicated. Note: The indication of the on-position may be in the form of marking, illumination, audible indication or other suitable means. Where the indication is in the form of marking, the relevant requirements of Clause 5 shall be complied with. *Compliance is checked by visual inspection.*		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
8.102	**Addition:** A MAINS SWITCH shall not be fitted in the MAINS flexible cable or cord. Note: Additional requirements for switches are given in Sub-clause 14.6. *Compliance is checked by visual inspection.*		N/A
8.103	**Addition:** Where resistors, capacitors or RC units are used for bridging contact gaps of switches CONDUCTIVELY CONNECTED TO THE MAINS, the components shall comply with Sub-clause 14.1a) or 14.2.2.		N/A
14.6.1	**Deletion:** Delete this clause.		N/A
14.6.2	**Deletion:** Delete this clause.		N/A
14.6.3	**Deletion:** Delete this clause.		N/A
14.6.4	**Deletion:** Delete this clause.		N/A
16.2	**Addition:** Add the following to Table 10.2) Where cross-sectional are 0.5 mm^2 is used, a fuse having rated interrupting capacity; equal or more than 500 A and rated current; equal or less than 3 A shall be provided in the plug.	Appliance coupler	N/A
Informative	Remarks: Add the following after 2nd paragraph of Sub-clause 18.1 as informative remarks. Picture tubes shall comply with the requirements of 18.1. As an alternative, manufacturers may choose the picture tubes to comply with IEC 61965.		N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

	National Differences Republic of Korea (KR) **IEC 60065, 6th ed.**	

5.101	Other marking; Wording “고압주의” or an information regulated in IEC Publication 60417 giving high voltage warning to layman shall be marked, if an apparatus contains a part more than 600 volts.		N/A
15.1.1	Plugs for the connection of the apparatus to the supply mains and socket outlets for providing mains power to other apparatus shall be comply with the Korean requirements (KSC 8300 and 8305).	Appliance inlet	N/A
31	Radio frequency interference The apparatus shall comply with the relevant CISPR requirements. (EMC = EMI + EMS)	Should be evaluated when subjected to national approval	N/A

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	National Differences Malaysia (MY) **IEC 60065, 7th ed.**		
	Energy Commission circular No.1 year 2003 (No.1/2003) States that a Certificate of Approval is required for manufacturing, selling, advertising, displaying or importing into Malaysia, electrical/electronic products Listed in Annex A.		*P*
	- The supply voltage in Malaysia is 240 Vac, at 50 Hz.		*P*
	- Class 0 and 01 appliances are not allowed.		*P*
	- 13 A fused plug-tops shall comply to Malaysian standard (MS 589:Part1:1997), if applicable.		*N/A*
	- 2-pin plug-tops shall comply to Malaysian standard (MS 1578:2003) if applicable.		*N/A*
	National Differences Ukraine (UA) **IEC 60065, 6th ed.**		
	“National difference” in testing of conformity with the requirements of IEC 60335 series standards is the value of the nominal voltage that is fixed 220 V a.c. for the power supply network in Ukraine and is used for testing instead of the value specified by manufacturer.		P

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	National Differences **Argentina (AR), Brazil (BR), China (CN), Japan (JP), Kenya (KE), Republic of Korea (KR), Montenegro (ME), Serbia (RS), Russia Federation (RU) and Ukraine (UA)** **IEC 60065, 7th ed. + A1** China (CN), India (IN), Turkey (TR) and South Africa (ZA) IEC 60065, 6th ed.		
	No National differences.		P

Translation the Safety Instruction (Germany Version)

Important Safety Instruction

1. Please read carefully .
2. Keep this instruction for later use.
3. Please disconnect the unit before cleaning.
4. Avoid the unit away from humility area.
5. Please check the input voltage before use.
6. Please avoid the wire on the ground from steping.
7. Please read the warning marking on the product.
8. Disconnect the unit if not use for a long time
9. Please disconnect the unit if the following conditions occurred.
   a) Power cord is damaged.
   b) Water get into the unit.
   c) In humility area
   d) The unit does not work as the specification.
   e) The unit dropped and damaged.
   f) Any symbol of damage.
10. The noise is below 70dB(A) according to DIN45 645.
11. Please use the power cord rated 6A, 250V, H03VV-F, 3G, 0.75 mm^2.
12. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
13. Where an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
14. Do not install this equipment in a confined space such a book case or similar unit.
15. The max. environment temperature is 40 C.

Wichtige Sicherheitshinweise

1. Bitte lesen Sie sich diese Hinweise sorgfältig durch
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Strommetz zu trennen Verwenden Sie keine Flüssig oder Aerosolreiniger Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Das Gerät ist vor Feuchtigkeit zu schützen.
5. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
6. Verlegen Sie die Netzanschlussleitung, so daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
7. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
8. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
9. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
   a - Netzkabel oder Netzstecker sind beschädigt.
   b - Flüssigkeit ist in das Gerät eingedrungen.
   c - Das Gerät war Feuchtigkeit ausgesetzt.
   d - Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
   e - Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
   f - Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
10. Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 645 beträgt 70dB(A) oder weniger.
11. Zum Netzanschluß dieses Gerätes ist eine geprüfte Leitung zu verwenden. Für einen Nennstrom bis 6A und einen Gerätegewicht bis 3kg ist eine Leitung H03VV-F, 3G, 0.75mm^2 oder besser einzusetzen.
12. Maximale Umgebungstemperatur des Gerätes beträgt +40°C.

IEC/EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict

USA – National Differences to IEC 60065:2001, Seventh Edition including Am. 1 dated 2005-10			
Clause	Requirement + Test	Result - Remark	Verdict
1.1.1	Delete reference to Annex L: Electronic flash apparatus for photographic purposes and replace with reference to UL 122.	Considered	N/A
	Mains connected apparatus intended for field installation complies with the National Electrical Code, ANSI, NFPA 70.		N/A
1.1.3	Requirements of apparatus intended for outdoor use comply with applicable clause of Annex A	Not for outdoor use.	N/A
1.1.5	Some equipment covered by these requirements may also be required to comply with applicable requirements in other appropriate standards .....:		N/A
4.2.1	The rated supply voltage for single phase apparatus is assumed to be 120V or 120/240V	Refer to main test report	P
4.2.4	a) Minimum audio output is not less than 0.5 W per channel unless the maximum audio output is less than 0.5 W per channel		N/A
4.2.4.1	An apparatus with multiple modes of operation, multiple signal input sources, or both, is operated according to the manufacturer's instructions to produce the maximum power input		N/A
4.2.11	Table 2 - External supply sources are assumed to be capable of delivering 30 A, unless otherwise specified (UL 60065 no-load voltage and internal resistance values)		N/A
4.3.4	As an alternative, PTC thermistors may also comply with UL 1434.	.	N/A
5	As an alternative, a reagent grade hexane with a minimum 85% as n-hexane may be used.	The marking withstands the required test.	P
	Test for conductive labels secured in place by adhesive		N/A
5.1	Component power supplies and adapters complying with UL 1310, UL 1950, or UL 60950 are considered to fulfill items "a" through "i" of this clause.		N/A
5.1f	Rated mains frequency marking on apparatus	50/60Hz	P
5.1g	Rated current or power marking on apparatus supplied by supply apparatus for general use		N/A

USA – National Differences to IEC 60065:2001, Seventh Edition including Am. 1 dated 2005-10			
Clause	Requirement + Test	Result - Remark	Verdict
5.1j	Date of Manufacture marking		P
5.1k	Factory origin identification marking	Globtek	P
5.1l	Combination of two graphical symbols and supplementary marking and/or single graphical symbol marking	Considered	N/A
5.1m	Equipment rack marking for audio/video systems	Not a system	N/A
5.1n	Class I apparatus having touch current levels greater than 0.75 MIU and equal to or less than 3.5 MIU must be marked with a high touch current marking.	Refer to test report clause 9.1.1.1 b.) Below the limit.	N/A
5.1o	Marking on apparatus having grille/ventilation areas of the top surface that are permitted to have higher temperature rises according to Note b of Table 3	No openings in the top surface.	N/A
5.2c	Output terminals are marked with voltage, frequency and current or power; output terminals installed or interconnected in the field must be marked with the class of wiring	No such terminals	N/A
5.2d	Speaker terminals are marked "Class 1 Wiring", "Class 2 Wiring" or "Class 3 Wiring".		N/A
5.2d	Operation manual explains risks and proper connecting and insulating techniques when connecting a speaker		N/A
5.3	An explanation and illustration of safety related graphical symbols used on the apparatus are included in the user instructions preceding any operating instructions	Considered	P
5.4	Important safety instructions are packed with each apparatus		P
5.4.1	Outdoor use marking for apparatus having no protection against exposure to water		N/A
5.4.1e	Deleted		N/A
5.4.1h	Reference to IEC 61695 is replaced by UL 61965	No cathode ray tubes inside.	N/A
5.4.3	When user operation and installation instructions contains instructions for use by skilled persons, the instructions are separate in format and preceded by a precautionary warning statement		N/A
6.1	Compliance is checked in accordance with the requirements in the U.S. Code of Federal Regulations, Title 21, Chapter 1, Subchapter J, Sections 1010.2, 1010.3, and 1020.10 by measuring the radiation produced by the apparatus employing a production chassis		N/A

USA – National Differences to IEC 60065:2001, Seventh Edition including Am. 1 dated 2005-10			
Clause	Requirement + Test	Result - Remark	Verdict
6.2	References to IEC 60825-1 are deleted		N/A
	Apparatus is classified and labeled according to the Code of Federal Regulations, Title 21, Chapter 1, Subchapter J, Sections 1010.2, 1010.3, 1040.10 and 1040.11.		N/A
6.2.2	Deleted		N/A
7	Table 3: Delete reference to conditions h and i under Table item e for lithium batteries		N/A
	Table 3: Temperature limits for various classes of insulation systems according to UL 60065	Refer to test report.	P
	Table 3, Note a: Materials rated in accordance with UL 746B may be used within their rated temperature	Refer to test report.	P
	Table 3, Note b: For grille/ventilation areas in the top surface directly above internal heatsinks, a temperature rise up to 65 K is allowed	No openings in the tor surface.	N/A
7.2	Applies to thermoplastic materials only. A material temperature rating can be accepted in lieu of the softening temperature.		P
	The softening test need not be performed on materials used in UL Listed or Recognized components	Refer to test report.	P
8.1	Metal parts are corrosion resistant	No risk of corrosion.	P
8.9.1	Sleeving, tape, tubing, and wire insulation comply with UL 224, UL 510, or UL 1441	Refer to test report table 14	P
8.10	Component power supplies and their internal insulation complying with UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the clause	Refer to test report.	P
8.17	As an option, winding wire insulation complies with the requirements in UL Subject 2353		P
8.19.1	An all-pole switch or circuit breaker is not required to have contact separation of 3 mm	Considered	N/A
8.23	Printed wiring boards involved with the risk of electric shock comply with the requirements in UL 796.		P
9.1.1.1	For Class I constructions the r.m.s. touch current to earth is not more than 3.5 MIU	Belowe the limit (refer to test report)	P
9.1.1.1a	For audio signals of professional and commercial apparatus, 120 V r.m.s.		N/A
	For audio signals other than professional and commercial apparatus, 71 V r.m.s.		N/A

USA – National Differences to IEC 60065:2001, Seventh Edition including Am. 1 dated 2005-10			
Clause	Requirement + Test	Result - Remark	Verdict
9.1.1.1b	Touch current carried out in accordance with UL 101 with the measuring instrument described in Annex D does not exceed 0.5 MIU. Delete Note 2.		P
9.1.1.2	UL articulated finger (figure 14) used instead of the test probe B (IEC 61032)	Hazardous parts are not accessible.	P
	Reference to test probes 18 and 19 of IEC 61032 are deleted		P
10	Table 5, Note 1: With respect to mains voltages in the range of 105-130 V (r.m.s.), the test voltages are considered to be 1414 V peak for basic and supplementary insulation and 2828 V peak for reinforced insulation		P
11	Component power supplies and their power transformers complying with UL 1310, UL 1950 3rd Ed., or UL 60950 are considered to fulfill the clause		N/A
11.1	The permissible touch current for terminal contacts increased to twice the value given in 9.1.1.1.		P
11.2.1	Additional fuse testing is not required if the temperature is limited by fuses		P
12	Component power supply adaptors and their enclosures complying with UL 1310, UL 1950 3rd Ed., or UL 60950 are deemed to fulfill the clause		P
12.1.3	Impact test uses the 50 mm steel sphere only	Refer below:	P
	Table 6 - Impact test criteria detailing impact location, impact energy and additional pass/fail results applied according to UL 60065	Top side, bottom side of enclosure. After the test the enclosure shows no cacks or significant deformation. Clearance and creepages are not reduced hazardous parts are not reachable.	P
12.1.4	As an alternative, any number from one to three samples are permitted to be used in any combination that results in a total of three drops		N/A
12.1.6	Handle strength test. When polymeric materials are involved, testing is to be conducted before and after the sub-clause 12.1.5 stress relief test.		N/A
12.8	Test for enclosures, barriers, components and leads that rely on adhesive		N/A
13	Component power supplies and their power transformers complying with UL 1310, UL 1950 3rd Ed., or UL 60950 are deemed to fulfill the clause	Refer to test report.	P
13.4	The material group is verified according to UL 746A	Material group IIIB assumed.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Reference to the IEC 60112 PTI test is deleted		P
13.5.1	Reference to IEC 60249-2 is replaced by UL 796		N/A
13.5.2	Coated printed wiring boards comply with UL 746C		N/A
14	Annex Y and additional component requirements applied according to UL 60065		N/A
14.1	Component power supplies and their resistors complying with UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the clause		N/A
14.2	Component power supplies and their capacitors complying with UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the clause.		N/A
14.2.1	As an alternative, a component such as a capacitor, a combination capacitor and resistor, or a suppressor may comply with UL 1414.		N/A
14.2.2	As an alternative, a capacitor, a combination capacitor and resistor, or a varistor, or a suppressor may comply with UL 1414.		N/A
14.2.4	Components subjected to the requirements in 14.2.1 and 14.2.2 also comply with UL 1414 enclosure requirements	Only separate approved capacitors used. Refer to table 14	P
14.3	Component power supplies and their inductors and windings complying with UL 1310, UL 1950 3rd Ed., or UL 60950 are considered to fulfill the clause		N/A
14.4	High voltage materials are rated V-2 minimum		N/A
14.4.1	High voltage arcing test replaces the High voltage transformers and multipliers test		N/A
14.4.2	Deleted		N/A
14.4.3	High voltage component part flame test		N/A
14.4.4	High voltage isolating component test		N/A
14.5.1.1	Thermal cut-outs comply with UL 873, UL 8730-2-9 or UL 60730-2-9		N/A
14.5.1.2	Thermal links comply with UL 60691		N/A
14.5.1.3	Deleted		N/A
14.5.2.1	Fuse links comply with UL 248-14		P
14.5.2.2	Reference to IEC 60127 is deleted		N/A
	Pre-arcing time/current characteristic and breaking capacity marking requirements are deleted		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14.5.3	As an alternative, a PTC thermistor may comply with requirements of UL 1434		N/A
14.5.4	Reference to fuse-links is deleted		P
	Other protective devices directly connected to the mains have adequate breaking capacity and comply with UL 873, UL 1416, UL 1417 or UL 2111		N/A
14.6.1	Switches and relays comply with UL 1054, UL 61058-1 or UL 508		N/A
	Mains switch or relay are rated for the total rated current consumption of the apparatus		N/A
	Rating of a mains switch or relay in audio apparatus intended for commercial use		N/A
14.6.2 - .4	Deleted		N/A
14.6.5	A switch or relay that controls a mains socket-outlet have a rating equal to the rated current consumption of the apparatus plus the current rating of the socket-outlet		N/A
14.6.6	Mains switches comply with (a), (b) or (c)		N/A
	Mains relay contacts comply with (a), (b) or (d)		N/A
	A switch that controls a mains receptacle complies with (b) and a relay that controls a mains receptacle complies with (b) or (d)		N/A
14.6.6a	Switch or relay contacts have current rating equal to or greater than 1.414 times the inrush current of the apparatus		N/A
14.6.6b	Switch or relay is TV rated		N/A
14.6.6c	Switch is located on the back of apparatus and is not operable from a remote control		N/A
14.6.6d	Relay subjected to the Relay Endurance Test		N/A
14.6.6.1	Peak inrush current test		N/A
14.6.6.2	Relay endurance test		N/A
14.6.7	Double pole switch controlling a.c. and d.c. circuits		N/A
14.7	The jointed test finger (Fig 14) is used to determine accessibility and operation of the interlock		N/A
14.10.1	Internal rechargeable and non-rechargeable batteries that are replaceable by the user or skilled persons additionally comply with 14.10.2 – 14.10.5.	No batteries	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test requirements from UL 2054 added for special battery packs that are removable by the user from the apparatus (Short circuit, Abnormal charging, Forced-discharge, and 250-N steady force tests may be carried separately from the apparatus)		N/A
	Note: Consumer grade, non-rechargeable carbon-zinc or alkaline batteries are not subjected to the tests specified in Clauses 14.10.2 – 14.10.5.		N/A
14.10.5	Alternatively, one sample subjected to three drops		N/A
14.10.6	Location of overcurrent protective device .....:		N/A
	Alternatively, the overcurrent protective device in the apparatus battery-supply circuit is not required if the apparatus is to be connected to a vehicle power outlet via UL 2089 vehicle battery adapter		N/A
14.11	Component power supplies and their optocouplers complying with UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the clause.		N/A
	Optocouplers comply with UL 1577		P
	Optocouplers bridging reinforced insulation comply with requirements for double protection as specified in UL 1577		P
	External clearances and creepage distances of optocouplers comply with 13.1		P
14.12	Reference to IEC 61051-2 replaced by UL 1449	NZR in compliance to UL1449	P
	Reference to IEC 60707 replaced by UL 94		P
	All references to IEC 60151 are deleted		P
15.1.1	Attachment plug current rating (no less than 125% of the current drawn under normal operating conditions) and voltage rating .....:	No Socket outlet or attachment plug provided.	N/A
	Configuration and electrical rating of an attachment plug for apparatus for use on more than one supply voltage by means of a voltage selector.....:		N/A
	Polarized attachment plug		N/A
	Wire gauge of conductors and internal wiring connecting mains socket-outlets		N/A
15.1.3.1	Means of output connections on an audio amplifier having an open-circuit audio output voltage not limited to 120 V that is permanently connected to the mains		N/A
	Quick Connect Terminals:		N/A
	a) Male tabs firmly mounted in place;		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Mating female connectors provided with the apparatus;		N/A
	c) Strain Relief Test of Clause 16.5;		N/A
	d) Installation instructions provided for assembly of terminal to a conductor and strain relief		N/A
	e) Terminals are appropriate for use with the size and type of wire specified		N/A
15.1.3.2	Audio amplifiers having an audio output not limited to 120 V that are connected to the mains by a flexible cord		N/A
15.2	Cross-sectional area of the earthing conductor in a supply cord or in an interconnecting cable		N/A
	Earthing conductors may have green or green/yellow insulation		P
15.3.5	Reference to IEC 60950 is replaced by Article 310 of the National Electrical Code, ANSI/NFPA 70	Appliance inlet	N/A
	Table 15 - "AWG" replace mm2 values		N/A
15.4	Component power supply adaptors complying with UL 1310, UL 1950 Third Edition, or UL 60950 fulfill the clause		N/A
16.1	Reference in the first paragraph to “sheathed” flexible cords is deleted		N/A
	References to IEC 60227 and IEC 60245 deleted		N/A
	Ampacity and VW-1 marking of mains supply flexible cords..... :	Refer to summary of testing	N/A
	Table 17A - Cords for apparatus		N/A
16.2	Power supply cord earthing conductor size ..... :		N/A
	Reference to IEC 60950, Table 3B is replaced by Article 400 of the National Electrical Code		N/A
	Table 18 - Upper current limit in column 1 increased from 16 to 30 A and "AWG" wire sizes		N/A
16.3	c) Flexible cords not complying with 16.1, used as connection between the apparatus and other apparatus are marked VW-1		N/A
16.5	When polymeric materials are involved, strain and twist testing is to be conducted before and after the sub-clause 12.1.5 stress relief test.		N/A
17.8	Expanded to include all cart/stand parts supplied by the manufacturer, such as casters and brackets. Suitable assembly instructions are required.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Relevant fixing means are not required when installation is to be done by a skilled person		N/A
17.10	Termination of aluminum conductors used as internal wiring	Only copper conductors used.	N/A
17.11	An accessory was investigated to determine that: a). The accessory, and the combination of the accessory and the apparatus presents no hazard in the sense of this standard, and b). The accessory is provided with installation instructions.		N/A
17.11.1	Installation of an accessory by a skilled person: a) The mechanical positioning is accomplished by means of tools normally available or by means of special tools provided as part of the installation kit,		N/A
	b) The electrical connections are made by using existing terminals and connections in the apparatus or the building wiring		N/A
18	Non-intrinsically protected picture tubes comply with 18.1, 18.2.2 and 18.3. Intrinsically protected picture tubes with a maximum face dimension exceeding 7.5 cm comply with UL 61965.		N/A
	A bulb of a picture tube having a face diameter of 7.5 cm or more are mounted in an enclosure		N/A
	Enclosure opening dimensions		N/A
18.1	All tubes are mounted such that the enclosure of the apparatus protects the tube against the effects of implosion.		N/A
18.2	Clauses 18.2, 18.2.1 and 18.2.3 are deleted		N/A
19	The tests in 19.1, 19.2 and 19.3 do not cause the apparatus to overturn.	Less than 7Kg	N/A
	The test in 19.2.1 does not cause the apparatus to slide		N/A
	When polymeric materials are involved, testing is to be conducted before and after the sub-clause 12.1.5 stress relief test.		N/A
19.1	References to an apparatus in combination with a supplied cart or recommended stand are deleted		N/A
19.2	References to an apparatus in combination with a supplied cart or recommended stand are deleted		N/A
19.2.1	Slide test		N/A
19.3	Horizontal force stability test using Table 20A values from UL 60065		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.5	Reference to the impact hammer in the first compliance paragraph is deleted	No glass used	N/A
19.6	Equipment rack mounting test	Desk top	N/A
20.1a	Deleted	Considered	N/A
20.1b	Exception for parts such as protection TV lenses, loudspeaker parts, external accessories, and fibrous materials		N/A
	Reference to IEC 60707 replaced by UL 94		P
20.1.2	Sleeving, extruded tubing and insulation on wiring are rated VW-1: a) wiring located in a circuit that is considered a potential ignition source, or	See table 14.	P
	b) wiring not located in a circuit that is a potential ignition source but is in contact with wiring located in a circuit that is a potential ignition source		N/A
20.1.2	Tape in contact with parts of circuits that are potential ignition sources is flame retardant	Tape of transformer TR1 is separate approved. (see table 14)	N/A
20.1.3	Printed wiring boards, on which the available power as the connection exceeds 15 W or the operating voltage exceeds 50 V a.c. or d.c under normal operating conditions, are of flammability category V-1 or better	PCB's rated UL94V-0	P
	Reference to IEC 60707 replaced by UL 94		P
	Exception for printed boards housed in metal enclosures is deleted		N/A
	Option to use Clause G.1 of Annex G is deleted		N/A
20.1.4	Components and parts comply with the relevant flammability category according to UL 94 as specified in table 21	Refer below:	P
	Component power supplies complying with UL1310, UL1950 3rd Ed., or UL60950 fulfill the clause		N/A
	Table 21 - Flammability categories for components and parts	(See appended table 14)	P
20.2.1	Fire enclosure required: 1) circuits and components where the available power exceeds 15 W, 2) inductors and windings conductively connected to the mains, and 3) high-voltage products.	Refer below:	P

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Clause	Requirement + Test	Result - Remark	Verdict
	The fire enclosure complies with the flammability requirements of Table 22 per UL 94 and 746C	Enclosure is made of UL94 V-0 material	P
	Reference to IEC 60707 or clause G.1 of annex G replaced by UL 94 or UL 746C		N/A
	Table 22 - Flammability categories for fire enclosures	Enclosure is made of UL94 V-0 material	P
20.2.2	Internal fire enclosures openings and material requirements		N/A
	Compliance is checked by inspection and measurement and using the articulated finger probe, figure 18.	No internal fire enclosures	N/A
20.2.3	Outer enclosures have a minimum flammability rating of HB when an internal fire enclosure is provided		N/A
A	Apparatus intended for outdoor use or for wet locations		N/A
	a) provided with a means to be transportable	Not inteded for outdoor use.	N/A
	b) has a mass less than 35 kg		N/A
	c) can be battery operated, or		N/A
	d) associated literature states or implies such use		N/A
	An apparatus as described in a), b), or c) above that is marked as specified in 5.4.1 a) is not intended for outdoor use or wet location use		N/A
	Apparatus permanently installed outdoors is considered to be for permanent outdoor use	No intended for outdoor use.	N/A
A.5	Clauses A.5, A.5.1 and A.5.4.1 are deleted		N/A
A.9.1.1	Touch current test after the water spray test described in A.11.1.1		N/A
A.10	Clauses A.10, A.10.2 and A.10.2.1-2 are deleted		N/A
A.11.1.1	Apparatus subjected to the water spray test specified in UL 1598		N/A
A.16.1	Flexible cords are suitable for outdoor use		N/A
A.20.2.1	Enclosures for an apparatus intended for permanent outdoor location comply with requirements for Type 3 enclosures in UL 50		N/A
B	IEC 62151 Clause 4 applies except for 4.1.2, 4.1.3, 4.2.1.1 and 4.2.1.2		N/A
	The requirements of 4.2.1.1 are replaced by the requirements or 2.3.1 of UL 60950, Third Edition		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltages on the TNV-0 circuits, TNV-1 circuits and accessible conductive parts in the event of a single insulation fault		N/A
	Apparatus intended to be connected to telecommunication networks and having ringing voltages applied to the apparatus is subjected to touch current limits in accordance with clause 5.1.8.1.1 of UL 60950		N/A
	Telecommunication network that uses outside cable complies with the requirements for protection against overvoltage from power line crosses per 6.4 of UL 60950		N/A
	UL 60950 Acoustic tests for apparatus containing an earphone held against the ear		N/A
	Apparatus provided with appropriate markings and instructions as described in Annex NAA of UL 60950		N/A
D	Reference to IEC 60990 replaced by UL 101	Refer below:	P
	Add touch current value in MIU where MIU = U2 x 2 (r.m.s. value)	MIU= 0.64mA	P
G	Annex G deleted		N/A
L	Annex L deleted		N/A
Q	Safety requirements for video apparatus for use in health care facilities		N/A
R	Safety requirements for undercabinet apparatus		N/A
S	Safety requirements for in-wall mounted apparatus		N/A
T	Safety requirements for apparatus with projection lamps		N/A
U	Safety requirements for permanently connected apparatus		N/A
V	Safety requirements for carts, stands, and similar apparatus for use with specific apparatus covered by this standard		N/A
W	Construction details for a 0.02-ohm shunt for use in the peak inrush-current measurement		N/A
X	Manufacturing and production-line tests and verification		N/A
Y	Standards for components		N/A

	CANADA DIFFERENCES **IEC60065, 7th ed + amd1**		
Clause	Requirement + Test	Result - Remark	Verdict
3	General requirements		P
3.2A	*[Add the following clause]* A component power supply complying with CAN/CSA-C22.2 No. 60950 is considered to comply with this construction and fault conditions of this Standard after taking into account any relevant conditions of acceptability.	Class I	P
4.2	Normal operating conditions		P
4.2.1	*[Add the following after the fifth paragraph]* For apparatus intended for use at nominal 120 V ac, the apparatus shall comply with this Standard at supply voltages between 108 and 125 V. For apparatus intended for use at nominal 240 V ac, the apparatus shall comply with this Standard at supply voltages between 216 and 250 V.		P
4.2.10	*[Add the following after the second paragraph]* As an alternative, a supply apparatus for general use complying with CAN/CSA-C22.2 No. 223 or CAN/CSA-C22.2 No. 60950 shall be acceptable.		N/A
5	Marking and instructions *[Add the following paragraph]* Adhesive nameplates on commercial products shall comply with CSA C22.2 No. 0.15.		P
5.1	Identification and supply ratings *[Add the following item]* hA) date of manufacture: a date or code identifying the period of manufacture shall be marked on the apparatus;		P
5.3A	*[Add the following clause]* Where a loudspeaker grille, removable from the outside, is relied on as part of the enclosure (see Clause 9.2), the following marking or equivalent shall be visible on the enclosure after removal of the grille: “Caution — To prevent electric shock hazard, replace grille.” Alternatively, the symbol in Clause 5.2 b) shall be visible after removal of the grille, and the caution wording above shall appear in the user instructions, accompanied by the symbol. Compliance is checked by inspection.		N/A
8	Constructional requirements with regard to protection against shock		P
8.9	*[Add the following title to this clause]* Mains wiring *[Add the following paragraph]* Wiring in circuits with voltages higher than 42 V peak shall comply with CSA C22.2 No. 127 or CAN/CSA-C22.2 No. 210.2.		P

	CANADA DIFFERENCES **IEC60065, 7th ed + amd1**		
Clause	Requirement + Test	Result - Remark	Verdict
9.1	Testing on the outside		
9.1.1A	Class I apparatus leakage *[Add the following clause]* For cord-connected Class I apparatus, the leakage current through the safety earthing conductor, expressed as voltages U and U , shall not exceed U = 105 V (peak) and U = 1.05 V (peak) (1.5 mA). 1 2 1 2 Apparatus having a leakage current between 0.75 mA and 1.5 mA shall be provided with a caution label on the mains cord with the following, or equivalent: “CAUTION — TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CENTRE PIN OF THIS PLUG MUST BE MAINTAINED”.		N/A
9.1.1.2	Determination of accessible parts *[Add the following after the fourth paragraph]* Moving parts of loudspeaker systems, such as dust caps, cones of drivers, or passive radiators, are not regarded as preventing accessibility. Note 1A: *See also Clause 13.3.1.*		N/A
9.2	Removal of protective covers *[Add the following after the second paragraph]* This requirement applies also to internal parts of loudspeaker systems that become accessible by removal of a loudspeaker grille from the outside either by hand or with the use of a tool, coin, or other object. In such cases, the apparatus shall be marked according to Clause 5.3A. *[Replace the third paragraph with the following]* Compliance is checked by inspections and by application of the tests of Clause 9.1.1, except that the measurements are made 2 s after removal of the cover or grille.		N/A
10	Insulation requirements		P
10.2A	Enclosure type designation and use *[Add the following clause]* If equipment is installed in environments where the enclosure is required to prevent ingress of water or dust, the enclosure shall be classified as a type recognized by the *Canadian Electrical Code, Part I,* and shall comply with the requirements of CAN/CSA-C22.2 No. 94.		N/A
11.2	Heating *[Add the following paragraph]* Flammable gases shall not be emitted from a component for more than 10 s.		P
12	Mechanical strength		P

	CANADA DIFFERENCES **IEC60065, 7th ed + amd1**		
Clause	Requirement + Test	Result - Remark	Verdict
12.3A	Television impacts *[Add the following clause]*		N/A
12.3A.1	For television sets and similar apparatus using a cathode ray tube larger than 160 mm diagonally, the top, sides, front, and rear of the enclosure, including the safety screen where provided, shall be capable of withstanding a single impact of 7 J in accordance with Clause 12.3A.2 without developing any opening larger than 130 mm in the enclosure of the cathode ray tube, unless the minor dimension of 2 any opening is not more than 7 mm. When applied to a safety screen, the impact shall not result in damage to its mounting to the extent that it is mechanically unsuitable for reuse, nor shall tempered glass, if used, be cracked. When applied to the face of a directly viewed cathode ray tube, the impact shall not cause any opening in the face of the tube. Scaling and cracking of the glass shall be permissible. A cathode ray tube that has been shown to comply with CAN/CSA-C22.2 No. 228 or CAN/CSA-E61965 shall be considered acceptable with no further tests.		N/A
12.3A.2	The impact specified in Clause 12.3A.1 shall be caused by allowing a solid, smooth, steel sphere 51 mm in diameter and weighing approximately 0.5 kg to strike the enclosure with the specified impact in a direction perpendicular to the enclosure surface. If deemed necessary, the enclosure shall be tested with the proper cathode ray tube mounted.		P
13.3	Clearances		P
13.3.1	General *[Add the following after the third paragraph]* Clearances between a loudspeaker voice coil and adjacent conductive parts shall be disregarded.		N/A
14.2	Capacitors and RC-units		P
14.2.1	*[Add the following paragraph]* As an alternative, an isolating capacitor complying with the applicable requirements of CSA C22.2 No. 1 shall be acceptable for bridging basic or supplementary insulation.		P
14.2.2	*[Add the following paragraph]* As an alternative, an across-line capacitor complying with the applicable requirements of CSA C22.2 No. 1 shall be acceptable.		P
14.5.1	Thermal releases		N/A
14.5.1.2	*[Add the following paragraph]* As an alternative, a thermal link complying with CSA C22.2 No. 209 shall be acceptable.		N/A

	CANADA DIFFERENCES **IEC60065, 7th ed + amd1**		
Clause	Requirement + Test	Result - Remark	Verdict
14.5.2	Fuse-links and fuse holders		P
14.5.2.1	*[Add the following paragraph]* As an alternative, a fuse-link complying with CSA C22.2 No. 248.14 shall be acceptable.		P
14.5.2.4	*[Add the following paragraph]* As an alternative, a fuseholder assembly complying with CSA C22.2 No. 39 shall be acceptable.	No fuseholdres	N/A
14.6	Switches	No switces	N/A
14.6.1	*[Add the following paragraph]* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9, shall be acceptable.		N/A
14.6.2	*[Add the following paragraph]* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9, shall be acceptable.		N/A
14.6.3	*[Add the following paragraph]* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9, shall be acceptable.		N/A
14.6.4	*[Add the following paragraph]* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9, shall be acceptable.		N/A
14.6.5	*[Add the following paragraph]* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9, shall be acceptable.		N/A
14.11	Optocouplers *[Add the following paragraph]* As an alternative, an optocoupler complying with CSA C22.2 No. 1 shall be acceptable.		P
14.12	Surge suppression varistors *[Add the following paragraph]* As an alternative, a varistor complying with CSA C22.2 No. 1 shall be acceptable.		P
14.12A	Gas discharge tubes *[Add the following clause]* Gas discharge tubes complying with the following tests may be connected to bridge basic or reinforced insulation. Ten samples of gas discharge tubes isolating the ac supply from exposed parts shall be subjected to the varistor pulse tests of Clause 14.12. Following the pulses, the device shall be allowed to return to room temperature. The dielectric breakdown voltage of the gas tube shall not decrease by more than 50%, and the gas discharge tube shall comply with the dielectric strength test of Clause 10.3, with the test voltage reduced to twice the mains voltage.		N/A

	CANADA DIFFERENCES **IEC60065, 7th ed + amd1**		
Clause	Requirement + Test	Result - Remark	Verdict
15.1	Plugs and sockets	Appliance inlet separately approved component	P
15.1.1	*[Add the following paragraph]* A receptacle provided for general purpose mains output shall comply with the requirements of CSA C22.2 No. 42 (dimensional requirements are also specified in IEC 60906-2). The attachment plug cap shall be of the polarized type when the apparatus is provided with a manually operated, mains-connected single-pole switch for apparatus on-off operation, a socket screwshell lampholder, or a 15 or 20 A socket-outlet.		N/A
15.1.2	*[Add the following paragraph]* Banana plugs shall be acceptable.		N/A
15.1.3	*[Add the following title]* Adapter output connectors *[Replace the first paragraph with the following]* Terminals and connectors used in output circuits of supply apparatus, whose output voltage is not a standard nominal mains voltage according to IEC 60038, Table 1, shall not be compatible with those specified for household and similar general purposes, for example those described in IEC 60083 [1], IEC 60320, IEC 60884, IEC 60906 (parts 1, 2, and 3), and CSA C22.2 No. 42.		P
15.2	Provisions for protective earthing *[Replace the third paragraph with the following]* Earthing connections shall comply with the test requirements of CSA C22.2 No. 0.4.		P
15.3	Terminals for external flexible cords and for permanent connection to the mains supply		N/A
15.3.1A	*[Add the following clause]* Equipment intended for permanent connection to the mains shall have provisions for connection to the wiring system in accordance with the *Canadian Electrical Code, Part I*. The terminal parts and all other provisions for permanent connection to fixed wiring shall comply with CAN/CSA-C22.2 No. 0.		N/A
15.4	Devices forming a part of the mains plug		N/A

	CANADA DIFFERENCES **IEC60065, 7th ed + amd1**		
Clause	Requirement + Test	Result - Remark	Verdict
15.4.2	*[Add the following paragraphs]* Mains plugs of non-permanently installed equipment shall comply with a) CSA C22.2 No. 21 for moulded-on-type attachment plugs; and b) CSA C22.2 No. 42 for disassembly-type attachment plugs (dimensional requirements are also specified in IEC 60906-2). Class II equipment provided with a general purpose mains outlet, or a lampholder, shall be provided with a polarized-type plug. If the plug is a polarized type, single-pole switches or overcurrent protectors shall not be connected in the identified conductor.		N/A
16	External flexible cords		N/A
16.1	*[Replace this clause with the following]* Flexible cord used for mains supply shall comply with the requirements of CSA C22.2 No. 49. The cord type shall be in accordance with Table 4 of CSA C22.2 No. 1. The attachment plug shall be rated not less than 125% of the apparatus rated current. Cord sets shall comply with the requirements of CSA C22.2 No. 21. Non-detachable flexible cables and cords of Class I apparatus shall be provided with a green/yellow core connected to the protective earthing terminal of the apparatus and, if a plug is provided, to the protective earthing contact of the plug. Compliance is checked by inspection. Note: *The colour for cores of flexible mains cords is contained in IEC 60173 [4].*	Appliance inlet	N/A
17	Electrical connections and mechanical fixings		N/A
17.9A	Adhesive securement and conductive coatings *[Add the following clause]*		N/A
17.9A.1	Adhesive securement The following parts, the displacement of which may result in a fire or shock hazard, shall not be secured solely by adhesive, unless the adhesive system complies with the resistance to external forces test of Clause 9.1.7, the bump test of Clause 12.1.1, and the impact test of Clause 12.1.3, after conditioning in accordance with Clause 17.9A.2: a) internal metal parts/conductive coatings; b) barriers; and c) required enclosure parts. Note: *Cathode ray tubes are excluded from this test.*		N/A
17.9A.2	Adhesive and conductive coating securement conditioning		N/A

	CANADA DIFFERENCES **IEC60065, 7th ed + amd1**		
Clause	Requirement + Test	Result - Remark	Verdict
17.9A.2.1	General Where required by Clause 17.9A.1, one sample of the apparatus or enclosure section shall be conditioned in accordance with the requirements of Clause 17.9A.2.2. Equivalent aging test data supplied by the manufacturer may be considered in lieu of aging.		N/A
17.9A.2.2	Aging Day 1: Place sample in oven at 100 ± 1EC for 1 week, or 82 ± 1EC for 8 weeks, at the manufacturer's option. Day 8 or day 57: 1. Remove from oven and leave at room temperature for 1 h. 2. Place in freezer at –35 EC for 2 h. 3. Remove from freezer and allow to reach room temperature overnight. Day 9 or day 58: 1. Place in a compartment at 96% relative humidity for 3 h. 2. Remove and leave at room temperature and humidity for 1 h. 3. Place in oven at a temperature selected in the first cycle for 3 h. 4. Remove and allow to come to room temperature overnight. Day 10 or day 59: 1. Place in freezer at –35 EC for 2 h. 2. Remove and leave at room temperature for 1 h. 3. Place in humidity chamber at 96% relative humidity for 3 h. 4. Remove and allow to come to room temperature overnight. Day 11 or day 60: 1. Place in oven at the temperature selected in the first cycle for 3 h. 2. Remove for 1 h. 3. Place in freezer at –35 EC for 2 h. 4. Remove and allow to come to room temperature overnight. Day 12 or day 61: 1. Place in humidity chamber at 96% relative humidity for 3 h. 2. Remove and perform mechanical tests as required by Clause 17.9A.1 as applicable.		N/A
18	Mechanical strength of picture tubes and protection against the effects of implosion		N/A

	CANADA DIFFERENCES **IEC60065, 7th ed + amd1**		
Clause	Requirement + Test	Result - Remark	Verdict
18.1A	*[Add the following clause]* A picture tube with a maximum face dimension exceeding 75 mm either shall be intrinsically protected with respect to effects of implosion and to mechanical impact, in accordance with CAN/CSA-C22.2 No. 228 or CAN/CSA-E61965, or the enclosure of the apparatus shall provide adequate protection against the effects of an implosion of the tube (see Clause 12).		N/A
19	Stability and mechanical hazards *[Add the following after the second paragraph]* The test of Clause 19.3 is only required for a) apparatus with a mass of 25 kg or more; b) apparatus, excluding loudspeaker systems, with a height of 1 m or more; or c) apparatus, including loudspeaker systems, in combination with a supplied or recommended cart or stand with a total height of 1 m or more. *[Add the following paragraph]* Apparatus not tested because it is intended to be fastened in place shall be provided with the following warning, marked on the apparatus or on a durable label attached to the mains cord: “WARNING: This apparatus must be securely attached to the floor/wall per installation instructions. Tipping, shaking, or rocking the machine may cause injury/death.”	Considered	N/A
20.2	Fire enclosure		P
20.2.1A	*[Add the following clause]* Enclosures of apparatus containing high-voltage or projection lamps shall have a minimum flammability rating of category FV 1 according to IEC 60707 at the minimum thickness used.		N/A
Annex B (normative)	*Apparatus to be connected to the telecommunication networks* *[Replace this annex with the following]* Apparatus intended for direct connection to a telecommunication network shall comply with a) Clause 19 of CSA C22.2 No. 1; or b) CAN/CSA-C22.2 No. 60950.		N/A