



Test Report issued under the responsibility of:



TEST REPORT
IEC 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report Number: 180500334SHA-001
Date of issue: 2019-04-11
Total number of pages..... 148

Applicant’s name.....: GlobTek, Inc.
Address: 186 Veterans Dr. Northvale, NJ 07647 USA

Test specification:
Standard: IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
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

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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.
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Test item description	ITE POWER SUPPLY
Trade Mark	
Manufacturer	Same as applicant
Model/Type reference	GT*96605-G2***** (See page 9 for detail)
Ratings	Input: 100-240V~, 50-60Hz, 1.5A; Output: 3.6-20VDC, Max.4.6A, Max. 60W Refer to page 9 model list for detail.

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Intertek Testing Services Shanghai
Testing location/ address.....:		Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA
<input type="checkbox"/>	Associated CB Testing Laboratory:	N/A
Testing location/ address.....:		
Tested by (name + signature).....:		Albert Zhou (Engineer) <i>Albert Zhou</i>
Approved by (name + signature).....:		Will Wang (Mandated reviewer) <i>Will Wang</i>
<input type="checkbox"/>	Testing procedure: TMP/CTF Stage 1:	N/A
Testing location/ address.....:		
Tested by (name + signature).....:		
Approved by (name + signature).....:		
<input type="checkbox"/>	Testing procedure: WMT/CTF Stage 2:	N/A
Testing location/ address.....:		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature).....:		
<input type="checkbox"/>	Testing procedure: SMT/CTF Stage 3 or 4:	N/A
Testing location/ address.....:		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature).....:		
Supervised by (name + signature).....:		

<p>List of Attachments (including a total number of pages in each attachment):</p> <p>Appendix No.1: Group and national differences for the CENELEC countries: from page 68 to page 85, total 18 pages;</p> <p>Appendix No.2: National differences for Singapore: from page 86 to page 90, total 5 pages;</p> <p>Appendix No.3: National differences for Japan: from page 91 to page 105, total 15 pages;</p> <p>Appendix No.4: National differences for China: from page 106 to page 112, total 7 pages;</p> <p>Appendix No.5: National differences for Australia and New Zealand: from page 113 to page 121, total 9 pages;</p> <p>Appendix No.6: National differences for Korea: page 122, total 1 page;</p> <p>Appendix No.7: National differences for UK: from page 123 to page 124, total 2 pages;</p> <p>Appendix No.8: National differences for USA: from page 125 to page 132, total 8 pages;</p> <p>Appendix No.9: Photos of product: from page 133 to page 148, total 16 pages;</p>	
<p>Summary of testing: From the result of our examination and tests in the submitted samples, conclude they comply with the requirements of the standard IEC 60950-1:2005 (Second Edition) + Am 1:2009 +Am 2:2013</p>	
<p>Tests performed (name of test and test clause):</p> <p>1.6.2 Input current test</p> <p>1.7.11 Marking durability test</p> <p>2.1.1.1 b Finger test</p> <p>2.1.1.1 c Pin test</p> <p>2.2.2 Voltage under Normal Conditions Test</p> <p>2.2.3 Voltage under Fault Conditions Test</p> <p>2.4 Limited current circuits Test</p> <p>2.5 Limited Power Sources Test</p> <p>2.9.2 Humidity conditioning test</p> <p>2.10.2 Determination of Working Voltage Test</p> <p>2.10.3 & 2.10.4 Clearances and Creepage Distances Measurement</p> <p>4.2.4 Mechanical strength – steady force test, 250 N</p> <p>4.2.6 Mechanical strength – drop test</p> <p>4.2.7 Mechanical strength – stress relief test</p> <p>4.5.2 Temperature test</p> <p>4.5.5 Ball pressure test</p> <p>5.1 Touch current test</p> <p>5.2 Electric strength test</p> <p>5.3 Abnormal operating and fault conditions test</p>	<p>Testing location:</p> <p>Intertek Testing Services Shanghai Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA</p>

Summary of compliance with National Differences:

The test report covers group- and national differences for the CENELEC countries.

The national differences for Singapore have been checked according to IEC 60950-1 1st ed.

The national differences for Japan have been checked according to IEC 60950-1:2005 + Amd. 1:2009 + Amd. 2:2013.

The national differences for China have been checked according to IEC 60950-1 2nd ed.

The national difference for Korea has been checked according to IEC 60950-1 2nd ed. + A1.

The national difference for United Kingdom has been checked according to IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013.

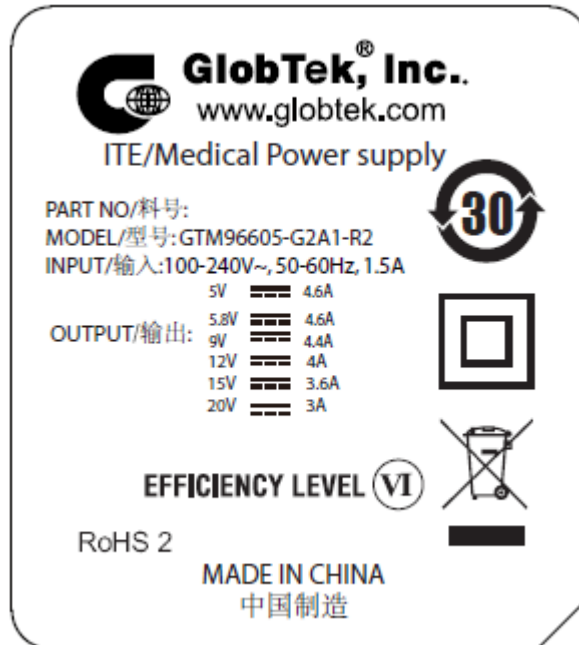
The national differences for Australia And New Zealand have been checked according to IEC 60950-1, Ed. 2.2 (2013).

The national differences for USA and Canada have been checked according to IEC 60950-1 with A1: 2009 and A2:2013.

The product fulfils the requirements of IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 and EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2:2013.

Copy of marking plate(representative):

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.



Note: The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added. Other models are with similar label as corresponding above models except different model name and output ratings.

Test item particulars.....:	
Equipment mobility.....:	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....:	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	+10%/-10%
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input checked="" type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Altitude during operation (m)	Max. 5000m
Altitude of test laboratory (m)	<100m
Mass of equipment (kg)	Max. 0.80kg
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	2018-05-21
Date (s) of performance of tests	2018-05-21 to 2018-10-23

General remarks:	
<p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. “(See Enclosure #)” refers to additional information appended to the report. “(See appended table)” refers to a table appended to the report. Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>When determining for test conclusion, measurement uncertainty of tests has been considered. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.</p> <p>This report is for the exclusive use of Intertek’s Client and is provided pursuant to the agreement between Intertek and its Client. Intertek’s responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.</p> <p>The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.</p>	
Manufacturer’s Declaration per sub-clause 4.2.5 of IEC 60060-02:	
<p>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</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable</p>
When differences exist; they shall be identified in the General product information section.	
<p>Name and address of factory (ies).....:</p> <p style="margin-left: 40px;">1. GlobTek (Suzhou) Co., Ltd Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China</p> <p style="margin-left: 40px;">2. GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA</p>	

General product information:

Product covered by this report is ITE power supply.

All models have the same circuit diagram, PCB layout and transformer.

The power supplies can be used with detachable power supply cord. There are different appliance inlets used on the device, which can provide with earthing connection or not. Functional earthing connection to secondary circuit, so it can be Class I or Class II construction. Both two constructions are in consideration in this report. Two pieces of outer enclosure are secured by ultrasonic welding.

The products are not intended to be used in maximum ambient temperature exceed of 40 °C

The products are not intended to use in environment which altitude exceed 5000m.

Model similarity:

GT*96605-G2*****

The 1st “*” part can be ‘M’ or ‘-’ or ‘H’ for market identification and not related to safety.

The 2nd “*” can be A1, A2, A3 denote different DC output voltage

When 2nd *=A1: 5V/4.6A, 5.8V/4.6A, 9V/4.4A, 12V/4A, 15V/3.6A and 20V/3A

When 2nd *=A2: 5V/3A, 5.8V/3A, 9V/3A, 12V/3A, 15V/3A and 20V/3A

When 2nd *=A3: 5V/4.6A, 5.8V/4.6A, 9V/4.4A, 12V/4A, 15V/3.6A, 20V/3A and any one voltage/current combinations (Power Profiles), between 3.6V and 20V.

The 3rd “*” denotes blank or the rated output wattage designation, which can be “01” to “60”, with interval of 0.1W.

The 4th “*”=-T2 means desktop class II with C8 AC inlet.

=-T2A means desktop class II with C18 AC inlet.

=-T3 means desktop class I with C14 AC inlet.

=-T3A means desktop class I with C6 AC inlet.

=-T3F means desktop class I with C14 AC inlet with FLOATING OUTPUT.

=-T3AF means desktop class I with C6 AC inlet with FLOATING OUTPUT.

=-R2 means hybrid desktop housing class II with C8 AC inlet.

=-R3A means hybrid desktop housing class I with C6 AC inlet.

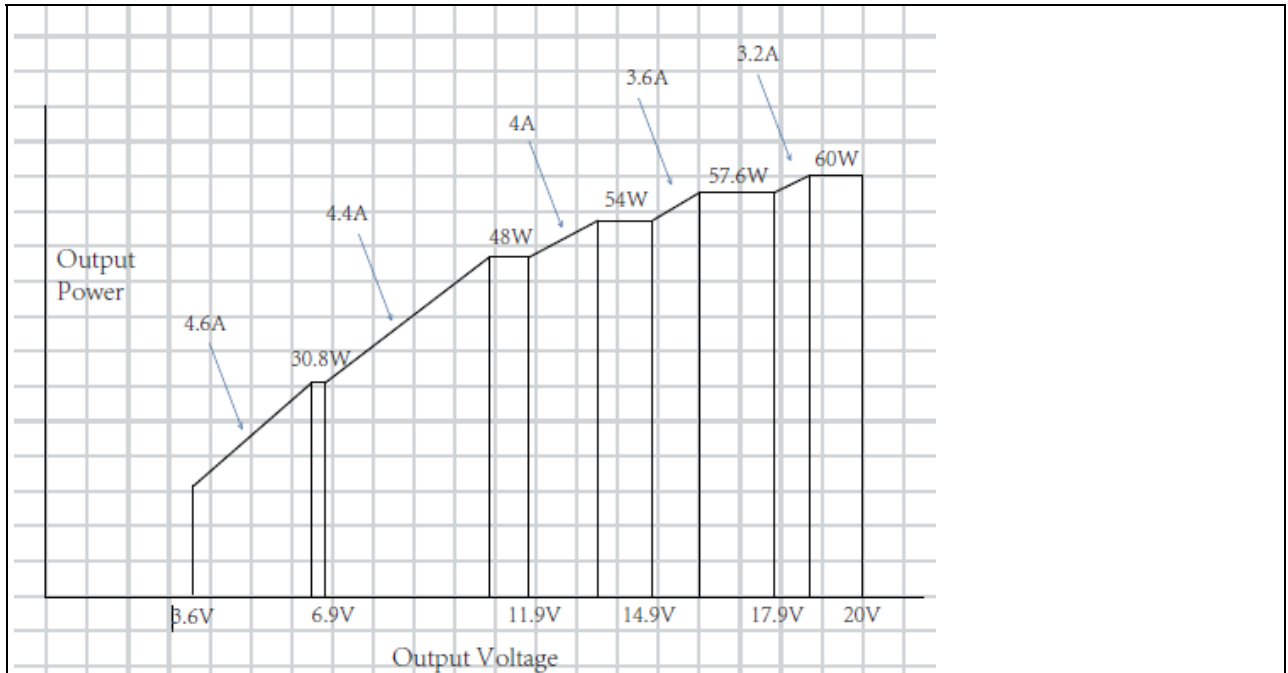
=-R3AF means hybrid desktop housing class I with C6 AC inlet with FLOATING OUTPUT.

The 5th “*” can be blank or -RA. -RA denotes the Product with RIGHT ANGLE daughter board (no output cord); blank denotes the product with output cord.

The last * denote any six character = 0-9 or A-Z or ()[] or – or blank for marketing purposes.

Model list:

Model	Input	Output voltage (Vdc)	Max. output current (A)	Max. output power (W)
GT*96605-G2A1-T2/T2A/T3/T3A/T3F/T3AF/R2/R3A/R3AF**	100-240VAC, 50-60Hz, 1.5A	5V/4.6A, 5.8V/4.6A, 9V/4.4A, 12V/4A, 15V/3.6A and 20V/3A		
GT*96605-G2A2-T2/T2A/T3/T3A/T3F/T3AF/R2/R3A/R3AF**		5V/3A, 5.8V/3A, 9V/3A, 12V/3A, 15V/3A and 20V/3A		
GT*96605-G2A3*-T2/T2A/T3/T3A/T3F/T3AF/R2/R3A/R3AF**		3.6V - 6.9V	4.6A	30.8W
		7.0V - 11.9V	4.4A	48.0W
		12.0V - 14.9V	4.0A	54.0W
		15.0V - 17.9V	3.6A	57.6W
	18.0V - 20.0V	3.2A	60.0W	



The output rating chart for model series GT*96605-G2A3*-T2/T2A/T3/T3A/T3F/T3AF/R2/R3A/R3AF**

Abbreviations used in the report:

- | | | | |
|--------------------------------------|-------------|----------------------------|--------------|
| - normal conditions | N.C. | - single fault conditions | S.F.C |
| - functional insulation | FI | - 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
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1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls		N/A
1.5.4	Transformers		P
1.5.5	Interconnecting cables		N/A
1.5.6	Capacitors bridging insulation	CY1, CY2 capacitors according to IEC60384-14	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		N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors		P
1.5.9.1	General	Surge suppressors comply with Annex Q.	P
1.5.9.2	Protection of VDRs		P
1.5.9.3	Bridging of functional insulation by a VDR		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		N/A

1.6	Power interface		P
1.6.1	AC power distribution systems		P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		P

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V)	100-240VAC	P
	Symbol for nature of supply, for d.c. only		N/A
	Rated frequency or rated frequency range (Hz)	50-60Hz	P
	Rated current (Ma or A)	1.5A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark		P
	Model identification or type reference	GT*96605-G2*****	P
	Symbol for Class II equipment only	<input type="checkbox"/> for model series GT*96605-G2**-T2/T2A/R2*	P
	Other markings and symbols	The additional marking does not give rise to misunderstandings	P
1.7.1.3	Use of graphical symbols		P
1.7.2	Safety instructions and marking		P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	The appliance inlet is regarded as disconnected device	P
1.7.2.3	Overcurrent protective device	Pluggable type A	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment		N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment		N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Fuse locations and markings are on PCB adjacent to fuse F1 and F2: T3.15A, 250VAC	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8	Controls and indicators	For functional indication a LED lights when the equipment is operating.	P
1.7.8.1	Identification, location and marking		N/A
1.7.8.2	Colours		N/A
1.7.8.3	Symbols according to IEC 60417.....		N/A
1.7.8.4	Markings using figures		N/A
1.7.9	Isolation of multiple power sources		N/A
1.7.10	Thermostats and other regulating devices		N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts		N/A
1.7.13	Replaceable batteries		N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations.....		N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		P
	Test by inspection	The concerned hazardous parts aren't accessible	P
	Test with test finger (Figure 2A)	The concerned hazardous parts aren't accessible	P
	Test with test pin (Figure 2B)	Hazardous live parts aren't accessible	P
	Test with test probe (Figure 2C)		N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards	No energy hazard in output	P
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s)	(see appended tables 2.1.1.7)	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.8	Energy hazards – d.c. mains supply		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		N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

2.2	SELV circuits		P
2.2.1	General requirements	(see appended table 2.2)	P
2.2.2	Voltages under normal conditions (V)	(see appended table 2.2)	P
2.2.3	Voltages under fault conditions (V)	(see appended table 2.2 and 5.3)	P
2.2.4	Connection of SELV circuits to other circuits	SELV circuits are only connected to other SELV circuits.	P

2.3	TNV circuits		N/A
2.3.1	Limits		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	Measuring instrument D.1 in Annex D is used	P
2.4.2	Limit values	(see appended table 2.4)	P
	Frequency (Hz)	(see appended table 2.4)	—
	Measured current (Ma)	(see appended table 2.4)	—
	Measured voltage (V)	(see appended table 2.4)	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured circuit capacitance (nF or μ F).....:	CY1, CY2: max. 3300pF	—
2.4.3	Connection of limited current circuits to other circuits		P

2.5	Limited power sources		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		P
	Use of integrated circuit (IC) current limiters		—
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) ..:		—
2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	Ground insulation wire as protective earthing bonding.	P
2.6.2	Functional earthing		P
	Use of symbol for functional earthing	Function earthing is separated from hazardous voltage by reinforced insulation.	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	Certified appliance inlet used	—
2.6.3.3	Size of protective bonding conductors		P
	Rated current (A), cross-sectional area (mm ²), AWG	See appended table 1.5.1	—
	Protective current rating (A), cross-sectional area (mm ²), AWG	See appended table 1.5.1	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	See appended table 2.6.3.4	P
2.6.3.5	Colour of insulation..... :	Green/yellow wiring is used.	P
2.6.4	Terminals		P
2.6.4.1	General	Appliance inlet soldered on PCB directly.	P
2.6.4.2	Protective earthing and bonding terminals		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), type, nominal thread diameter (mm)	Certified appliance inlet used.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment	This unit has its own earthing connection. Any other units connected via the output shall be provided SELV only.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective device in protective earthing or bonding conductor.	P
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect earth without disconnecting mains as an appliance inlet is used.	P
2.6.5.4	Parts that can be removed by an operator	Appliance inlet used, earthing connected before and disconnected after hazardous voltage. No other operator removable parts.	P
2.6.5.5	Parts removed during servicing	It is not necessary to disconnect earthing except for the removing of the earthed part itself.	P
2.6.5.6	Corrosion resistance	All safety earthing connections in compliance with Annex J.	P
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		P
2.7.3	Short-circuit backup protection		P
2.7.4	Number and location of protective devices	Protection by two building in current fuse in single fault condition.	P
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel		N/A

2.8	Safety interlocks		N/A
2.8.1	General principles		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
2.9.2	Humidity conditioning	120h	P
	Relative humidity (%), temperature (°C)	93%, 40°C	—
2.9.3	Grade of insulation	Insulation is considered to be functional, reinforced or double insulation	P
2.9.4	Separation from hazardous voltages	Separated from hazardous voltage by reinforced or double insulation	P
	Method(s) used	Method 1	—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency	Max. 58.67kHz	P
2.10.1.2	Pollution degrees	2	P
2.10.1.3	Reduced values for functional insulation		P
2.10.1.4	Intervening unconnected conductive parts		P
2.10.1.5	Insulation with varying dimensions		P
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		P
2.10.2.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.2.2	RMS working voltage		P
2.10.2.3	Peak working voltage		P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages	Transient voltages 2500V peak	P
	a) AC mains supply	100-240V	P
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		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	Evaluated according to 5.3.4 c)	N/A
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	1500V peak	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		N/A
2.10.3.9	Measurement of transient voltage levels		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		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.7	Separable thin sheet material		P
	Number of layers (pcs)	2 layers for insulation tape around transformer	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 2.10.5)	P
	Electric strength test		—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components	Approved TIW was used.	P
	Working voltage	240Vr.m.s, 352Vpeak	P
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U	Certified triple insulated wire as secondary winding wire	P
	Two wires in contact inside wound component; angle between 45° and 90°	Not in contact between primary winding and secondary winding. The PTFE tube is provided to protect against mechanical stress	P
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	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		P
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	No coated printed board used.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.7	Component external terminations		P
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		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

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection		P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation and cause hazard.	P
3.1.3	Securing of internal wiring	The wires are secured by soldering and glue (on PCB) so that a loosening of the terminal connection is unlikely.	P
3.1.4	Insulation of conductors	(see appended table 5.2)	P
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	All conductors are reliable secured.	P
	10 N pull test	Force of 10 N applied to the termination points of the conductors.	P
3.1.10	Sleeving on wiring		N/A

3.2	Connection to a mains supply		P
3.2.1	Means of connection	Appliance inlet was used	P
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets		P
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		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		N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space		N/A
3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	No wiring terminals.	N/A
3.3.2	Connection of non-detachable power supply cords		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

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.1	General requirement		P
3.4.2	Disconnect devices	Appliance inlet was used as disconnected device.	P
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized	There is no parts remained with hazardous voltage or energy in the equipment when SMPS is separated from AC mains.	P
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles – single-phase and d.c. equipment	Single-phase	P
3.4.7	Number of poles – three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		P
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits :	SELV circuit	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	EUT with a mass less than 7kg.	N/A
	Test force (N) :	Not a floor-standing unit.	N/A
4.2	Mechanical strength		P
4.2.1	General		P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.6	Drop test; height (mm)	1000mm	P
4.2.7	Stress relief test	After 7h at 80°C and cooling down to room temperature, no shrinkage, distortion or loosening of enclosure parts was noticeable on the unit.	P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N)		N/A

4.3	Design and construction		P
4.3.1	Edges and corners		P
4.3.2	Handles and manual controls; force (N)		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts		P
4.3.5	Connection by plugs and sockets		P
4.3.6	Direct plug-in equipment	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		N/A
4.3.8	Batteries		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		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		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		N/A
4.3.13.2	Ionizing radiation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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 visible LED indicators are diffuse type.	P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)		
4.3.13.6	Other types		N/A

4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No moving parts	N/A
4.4.2	Protection in operator access areas		N/A
	Household and home/office document/media shredders		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

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Clause	Requirement + Test	Result - Remark	Verdict
	Normal load condition per Annex L	Rated load with continuous operation.	—
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

4.6	Openings in enclosures		P
4.6.1	Top and side openings	No opening	P
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures	No opening	P
	Construction of the bottom, dimensions (mm) ..		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in 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		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		N/A
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures	The fire enclosure is minimum V-1 material.	P
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	(see appended table 4.7)	P
4.7.3.5	Materials for air filter assemblies		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.6	Materials used in high-voltage components		N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	(see appended Table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		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		P
5.1.4	Application of measuring instrument	Measuring instrument D.1 in Annex D is used	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V)	264	—
	Measured touch current (mA)	(see appended table 5.1)	—
	Max. allowed touch current (mA)	(see appended table 5.1)	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)....		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	Electric strength		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		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		N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation	Requirement c)	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE		N/A
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

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		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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		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

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Clause	Requirement + Test	Result - Remark	Verdict
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	(see appended table 5.3)	N/A
B.9	Test for three-phase motors	(see appended table 5.3)	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	T1	—
	Manufacturer	(see appended table 1.5.1)	—
	Type	(see appended table 1.5.1)	—
	Rated values	(see appended table 1.5.1)	—
	Method of protection.....	Protected by circuit	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended tables 5.2 and C2)	P
	Protection from displacement of windings.....	By insulation tape	P

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
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Clause	Requirement + Test	Result - Remark	Verdict
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
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)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
	Metal(s) used	Copper and soldering pin	—
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

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Clause	Requirement + Test	Result - Remark	Verdict
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)		P
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		P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
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
	- Preferred climatic categories	REFER TO LIST OF CRITICAL COMPONENTS.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- Maximum continuous voltage	REFER TO LIST OF CRITICAL COMPONENTS.	P
	- Combination pulse current	REFER TO LIST OF CRITICAL COMPONENTS.	P
	Body of the VDR Test according to IEC60695-11-5.....	REFER TO LIST OF CRITICAL COMPONENTS.	P
	Body of the VDR. Flammability class of material (min V-1).....	V-0	P

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
			—

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		P
		Approved TIW	—

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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		P
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		P
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)		P
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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....:		N/A
	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

IEC 60950-1			
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	Mark(s) of conformity ¹	
Enclosure (all parts)	SABIC INNOVATIVE PLASTICS B V	SE1X, SE1	PPE+PS, Min. V-1, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329	
Alt. use	SABIC INNOVATIVE PLASTICS B V	SE100	PPE+PS, Min. V-1, Min. thickness: 2.0mm, 95°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329	
Alt. use	SABIC INNOVATIVE PLASTICS B V	C2950	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329	
Alt. use	SABIC INNOVATIVE PLASTICS B V	CX7211 EXCY0098	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 90°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329	
Alt. use	SABIC INNOVATIVE PLASTICS B V	945	PC, Min. V-0, Min. thickness: 2.0mm, 120°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329	
Alt. use	SABIC INNOVATIVE PLASTICS B V	HF500R	PC, V-0, Min. thickness: 2.0mm, 125°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329	
Alt. use	SABIC JAPAN L L C	SE1X, SE1	PPE+PS, Min. V-1, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780	
Alt. use	SABIC JAPAN L L C	C2950	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780	
Alt. use	SABIC JAPAN L L C	CX7211	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 90°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780	
Alt. use	SABIC JAPAN L L C	945	PC, Min. V-0, Min. thickness: 2.0mm, 120°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780	
Alt. use	SABIC JAPAN L L C	HF500R	PC, V-0, Min. thickness: 2.0mm, 125°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780	

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	TEIJIN CHEMICALS LTD	LN-1250P LN-1250G	PC, Min. V-0, Min. thickness: 2.0mm, 115°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E50075
Alt. use	CHI MEI CORPORATION	PA-765A	ABS, Min. V-0, Min. thickness: 2.0mm, 85°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E56070
Alt. use	CHI MEI CORPORATION	PC-540	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 70°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E56070
Output Cord	SUZHOU DIOUDE ELECTRONICS CO LTD	1185, 2464, 2468, SPT-1, SPT-2	14 to 28 AWG, Min. 300V, Min. 105°C, VW-1 supplied with a stripped and tinned connection, or any style DC output connector.	IEC/EN 60950-1 UL758	Tested with appliance UL E336191
Alt. use	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1185, 2464, 2468, SPT-1, SPT-2	14 to 28 AWG, Min. 300V, Min. 105°C, VW-1 supplied with a stripped and tinned connection, or any style DC output connector.	IEC/EN 60950-1 UL758	Tested with appliance UL E333601
Alt. use	Interchangeable	Interchangeable	14 to 28 AWG, Min. 300V, Min. 105°C, VW-1 supplied with a stripped and tinned connection, or any style DC output connector.	IEC/EN 60950-1 UL758	Tested with appliance UL Approved
Mylar Insulating Sheet	TORAY INDUSTRIES INC	Lumirror H10	VTM-2, min. 0.4 mm thickness, 105°C	IEC 60950-1 UL94	Tested within appliance UL E86511
Alt. use	SKC CO LTD	SH71S	VTM-2, min. 0.4 mm thickness, 105°C	IEC 60950-1 UL94	Tested within appliance UL E74359
Alt. use	FORMEX, DIV OF IL TOOL WORKS INC, FORMERLY FASTEX, DIV OF IL TOOL WORKS INC	FORMEX GK series	V-0, min. 0.4 mm thickness, 115°C	IEC 60950-1 UL94	Tested within appliance UL E207780
Alt. use	SABIC INNOVATIVE PLASTICS US LLC	FR60 series	V-0, min. 0.4 mm thickness, 130°C	IEC 60950-1 UL94	Tested within appliance UL E207780

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	SABIC INNOVATIVE PLASTICS US LLC	FR63 series	V-0, min. 0.4 mm thickness, 130°C	IEC 60950-1 UL94	Tested within appliance UL E207780
Alt. use	SABIC INNOVATIVE PLASTICS US LLC	FR65 series	V-0, min. 0.4 mm thickness, 130°C	IEC 60950-1 UL94	Tested within appliance UL E207780
Alt. use	SABIC INNOVATIVE PLASTICS US LLC	FR7 series	V-0, min. 0.4 mm thickness, 130°C	IEC 60950-1 UL94	Tested within appliance UL E207780
Alt. use	SABIC INNOVATIVE PLASTICS US LLC	FR700 series	V-0, min. 0.4 mm thickness, 130°C	IEC 60950-1 UL94	Tested within appliance UL E207780
Alt. use	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP WT-10 series	VTM-0, min. 0.4 mm thickness, 110°C	IEC 60950-1 UL94	Tested within appliance UL E315185
Alt. use	SICHUAN LONGHUA FILM CO LTD	PP-(i)(j)	V-0, min. 0.4 mm thickness, 105°C	IEC 60335-1 UL94	Tested within appliance UL E254551
Appliance Inlet (CN1) Class I units	Zhejiang LECI Electronics	DB-6	250 Vac; 2.5A; 3 pins, 75°C, C6 type	IEC/EN 60320-1 UL 498	VDE 40032465 UL E302229
Alt. use	Tecx-Unions Technology Corp	TU-333	250 Vac; 2.5A; 3 pins, 75°C, C6 type	IEC/EN 60320-1 UL 498	ENEC-00633 UL E220004
Alt. use	Rich Bay Co Ltd	R-30790	250 Vac; 2.5A; 3 pin, 75°C, C6 type	IEC/EN 60320-1 UL 498	VDE 40030381 UL E184638
Alt. use	Sun Fair Electric Wire & Cable (HK) Co Ltd	S-02	250 Vac; 2.5A; 3 pins, 75°C, C6 type	IEC/EN 60320-1 UL 498	VDE 40034448 UL E226643
Alt. use	DLK Electronics Technology Co Ltd	CDJ-2	250 Vac; 2.5A; 3 pins, 75°C, C6 type	IEC/EN 60320-1 UL 498	VDE 40015580 UL E217394
Alt. use	Inalways Corp.	0724	250 Vac; 2.5A; 3 pins, 75°C, C6 type	IEC/EN 60320-1 UL 498	ENEC/FI 2010080 UL E94191
Alt. use	Zhe Jiang BeiErjia	ST-A04-002	250 Vac; 2.5A; 3 pins, 75°C, C6 type	IEC/EN 60320-1 UL 498	VDE 40016045 UL E225980

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Rong Feng IndustrialCo., Ltd.	RF-190	250 Vac; 2.5A; 3 pins, 75°C, C6 type	IEC/EN 60320-1 UL 498	VDE 40030379 UL E102641
Appliance inlet (CN1) Class I units	Zhejiang LECI Electronics	DB-14	250 Vac; 10A; 3 pins , 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40032137 UL E302229
Alt. use	Tecx-Unions Technology Corp	TU-301-S TU-301-SP	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	ENEC00647 UL E220004
Alt. use	Rich Bay Co Ltd	R-301SN	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40030228 UL E184638
Alt. use	Sun Fair Electric Wire & Cable (HK) Co Ltd	SS-120	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40034447 UL E226643
Alt. use	Inalways Corp.	0711	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	ENEC2010084 UL E94191
Alt. use	Zhe Jiang BeiErjia	ST-A01-003J	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40013388 UL E225980
Alt. use	Rong Feng IndustrialCo., Ltd.	SS-120	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40028101 UL E102641
Appliance inlet (CN1) Class II units	Zhejiang LECI Electronics	DB-8	250 Vac; 2.5A; 2 pins, 75°C, C8 type	IEC/EN 60320-1 UL 498	VDE 40032028 UL E302229
Alt. use	Delikang Electronics Technology Co Ltd	CDJ-8	250 Vac; 2.5A; 2 pins, 75°C, C8 type	IEC/EN 60320-1 UL 498	VDE 40025531 UL E217394
Alt. use	Rich Bay Co Ltd	R201SN90	250 Vac; 2.5A; 2 pins, 75°C, C8 type	IEC/EN 60320-1 UL 498	VDE 40030384 UL E184638
Alt. use	Sun Fair Electric Wire & Cable (HK) Co Ltd	S-01	250 Vac; 2.5A; 2 pins, 75°C, C8 type	IEC/EN 60320-1 UL 498	VDE 40034449 UL E226643
Alt. use	Tecx-unions Technology Corp	SO-222 series	250 Vac; 2.5A; 2 pins, 75°C, C8 type	IEC/EN 60320-1 UL 498	VDE 40020337 UL E220004
Alt. use	Inalways Corp.	0721	250 Vac; 2.5A; 2 pins, 75°C, C8 type	IEC/EN 60320-1 UL 498	ENEC/FI 2010087 UL E94191
Alt. use	Zhe Jiang BeiErjia	ST-A03-005	250 Vac; 2.5A; 2 pins, 75°C, C8 type	IEC/EN 60320-1 UL 498	VDE 40014833 UL E225980

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Rong Feng IndustrialCo., Ltd.	RF-180	250 Vac; 2.5A; 2 pins, 75°C, C8 type	IEC/EN 60320-1 UL 498	VDE 40030168 UL E102641
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T4 T5	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E154355
Alt. use	SHUANG MING INDUSTRY CO LTD	T005V0 T015V0	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested within appliance UL E78017
Alt. use	SHANGHAI H-FAST ELECTRONIC S CO LTD	211001	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E337862
Alt. use	GUANGDE BOYA XINXING ELECTRONIC TECHNOLOGY CO LTD	BY-1	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E475783
Alt. use	SHENZHEN GOLDEN BOARD CIRCUIT	JYH-2	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E489124
Alt. use	ZHEJIANG WANZHENG ELECTRONICS SCIENCE & TECHNOLOGY CO LTD	JWZ-2	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E302598
Fuse (F1, F2) (F2 optional)	Conquer Electronics Co., Ltd.	MST series	T3.15AL, 250VAC,	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017118 UL E82636
Alt. use	Suzhou Walter Electronic Co. Ltd.	2010	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3	VDE 40018781
Alt. use	Suzhou Walter Electronic Co. Ltd.	ICP-Series	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3	VDE 40012824
Alt. use	Zhongshan Lanbao Electrical Appliances Co., Ltd.	RTI-10 Serie(s)	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017009 UL E213695

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Bel Fuse Ltd.	RST-Serie(s)	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt. use	Cooper Bussmann LLC	SS-5	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015513 UL E19180
Alt. use	Dongguan Better Electronics Technology Co., Ltd.	932	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40033369 UL E300003
Alt. use	Shenzhen Lanson Electronics Co. Ltd.	SMT	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
Alt. use	Conquer Electronics Co., Ltd.	MET series	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017157 UL E82636
Alt. use	Hollyland Company Limited	5ET	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015669 UL E156471
Alt. use	Hollyland Company Limited	32S-020H	T3.15AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40011830 UL E156471
X capacitor (CX1) (Optional)	Cheng Tung Industrial Co., Ltd.	CTX	Max 0.47 μ F, Min.300V,105°C X1 or X2	IEC/EN 60384-14 UL 1414	VDE 40022642 UL E193049
Alt. use	Tenta Electric Industrial Co. Ltd.	MEX	Max 0.47 μ F, Min.250V,100°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 119119 UL E222911
Alt. use	JOEY ELECTRONICS (DONG GUAN) CO LTD	MPX	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032481 UL E216807

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max 0.47 μ F, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40015608 UL E183780
Alt. use	Yuon Yu Electronics Co. Ltd.	MPX	Max 0.47 μ F, Min.250V,100°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032392 UL E200119
Alt. use	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40014686 UL E237560
Alt. use	Jiangsu Xinghua Huayu Electronics Co., Ltd.	MPX	Max 0.47 μ F, Min.250V,100°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40022417 UL E311166
Alt. use	Dain Electronics Co., Ltd.	MEX	Max 0.47 μ F, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt. use	Dain Electronics Co., Ltd.	MPX	Max 0.47 μ F, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt. use	Dain Electronics Co., Ltd.	NPX	Max 0.47 μ F, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt. use	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	Max 0.47 μ F, Min.250V,110°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018690 UL E252286
Alt. use	Xiangtai Electronic (Shenzhen) Co., Ltd.	MKP	Max 0.47 μ F, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40036065 UL E357475
Alt. use	Xiangtai Electronic (Shenzhen) Co., Ltd.	MPX	Max 0.47 μ F, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40036065 UL E357475

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Carli Electronics Co., Ltd.	MPX	Max 0.47 μ F, Min.250V,100°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40008520 UL E120045
Alt. use	DONG GUAN AJC INDUSTRIAL CO., LTD	MPX/MKP	Max 0.47 μ F, Min.250V,100°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40045532 UL E477850
Alt. use	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	Max 0.47 μ F, Min.250V,110°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40034679 UL E208107
Y capacitor (CY1, CY2) (Optional)	TDK Corporation	CD	Y1, AC250V, max. 3300pF, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40029780 UL E37861
Alt. use	Success Electronics Co., Ltd.	SE	Y1, AC250V, max. 3300pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037211 VDE 40020002 UL E114280
Alt. use	Success Electronics Co., Ltd.	SB	Y1, AC250V, max. 3300pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037221 VDE 40020001 UL E114280
Alt. use	Murata Mfg. Co., Ltd.	KX	Y1, AC250V, max. 3300pF, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40002831 UL E37921
Alt. use	Walsin Technology Corp.	AH	Y1, AC250V, max. 3300pF, 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001804 UL E146544
Alt. use	Haohua Electronic Co.	CT7	Y1, AC250V, max. 3300pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40003902 UL E233106
Alt. use	Xiangtai Electronic (Shenzhen) Co., Ltd.	YO-series	Y1, AC250V, max. 3300pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40036880 UL E319473

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	JUHONG ELECTRONICS LTD	JB- series	Y1, AC250V, max. 3300pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40035339 UL E253194
Alt. use	JYA-NAY Co., Ltd.	JN	Y1, AC250V, max. 3300pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001831 UL E201384
Alt. use	Jyh Chung Electronic Co., Ltd.	JD	Y1, AC250V, max. 3300pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 137027 UL E187963
Alt. use	WELSON INDUSTRIAL CO LTD	WD	Y1, AC250V, max. 3300pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40016157 UL E104572
Alt. use	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD-Series	Y1, AC250V, max. 3300pF, 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40025754 UL E208107
Transformer (T1)	GlobTek / ENG / BOAM / HAOPUWEI	TF093	Class B, with critical component listed below	IEC 60950-1	Tested with appliance
- Insulation system used in T1	GlobTek	GTX-130-TM	Class 130 (B)	IEC 60950-1	Tested with appliance
Alt. use	ENG	ENG130-1	Class 130 (B)	IEC 60950-1	Tested with appliance
Alt. use	Haopuwei	ZT-130	Class 130 (B)	IEC 60950-1	Tested with appliance
Alt. use	BOAM	BOAM-01	Class 130 (B)	IEC 60950-1	Tested with appliance
Alt. use	BOAM	B1	Class 130 (B)	IEC 60950-1	Tested with appliance
- Magnet wire	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWN/U (UL E201757)	MW28-C, 130°C	IEC 60950-1	Tested with appliance

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	BOLUO COUNTY XIN LONG ELECTRICIAN DATA CO LTD	2UEW-F (UL E229423)	MW 79-C, 155°C	IEC 60950-1	Tested with appliance
Alt. use	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U (UL E201757)	MW75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JUNG SHING WIRE CO LTD	UEW-4 (UL E174837)	MW75C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JUNG SHING WIRE CO LTD	UEY-2 (UL E174837)	MW28-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY CO LTD	2UEW/130 (UL E335065)	MW75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	CHANGZHOU DAYANG WIRE & CABLE CO LTD	2UEW/130 (UL E158909)	MW75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	WUXI JUFENG COMPOUND LINE CO LTD	2UEWB (UL E206882)	MW75#, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JIANGSU DARTONG M & E CO LTD	UEW (UL E237377)	MW 75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	SHANDONG SAINT ELECTRIC CO LTD	UEW/130 (UL E194410)	MW75#, 130°C	IEC 60950-1	Tested with appliance
Alt. use	ZHEJIANG LANGLI ELECTRIC EQUIPMENTS CO LTD	UEW (UL E222214)	MW 79#, 130°C	IEC 60950-1	Tested with appliance
Alt. use	NINGBO JINTIAN NEW MATERIAL CO LTD	2UEW (UL E227047)	MW 75-C, 130°C	IEC 60950-1	Tested with appliance
-Triple-insulated wire (Secondary)	Great Leoflon Industrial Co., Ltd.	TRW (B) Serie(s)	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 136581 UL E211989

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
- Alt. use	COSMOLINK CO. Ltd.	TIW-M Serie(s)	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 138053 UL E213764
- Alt. use	Furukawa Electric Co., Ltd. Electronics & Automotive Systems Company Global Business Development Division	TEX-E	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 006735 UL E206440
- Alt. use	TOTOKU ELECTRIC CO LTD	TIW-2	Reinforced insulation, rated 130° C (Class B)	IEC 60950-1 UL 2353 UL 60601-1	VDE 40005152 UL E249037
- Alt. use	E&B TECHNOLOGY CO LTD	E&B-XXXB E&B-XXXB-1	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	VDE 40023473 UL E315265
- Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TIW	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	Tested with appliance UL E249037
- Alt. use	SHENZHEN JIUDING NEW MATERIAL CO LTD	DTIW-B	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	VDE 40037495 UL E357999
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J T375HF	V-0, 150°C, thickness 0.45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	CHANG CHUN PLASTICS CO LTD	4130	V-0, 140°C, thickness 0.74 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0.45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41429
- Alt. use	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0.45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E42956
-Insulating tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 1350T-1 44	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E17385

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
- Alt. use	BONDTEC PACIFIC CO LTD	370S(b)	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E175868
- Alt. use	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E165111
- Alt. use	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A(b)	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E246950
- Alt. use	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX(a)(b)	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E246820
-PTFE tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFT / TFS	Min. 300V, 200°C	IEC 60950-1	Tested with appliance UL E156256
-Alt. use	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	WF	600V, 200°C	IEC 60950-1	Tested with appliance UL E203950
-Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-T / CB- TT-S	Min. 300V, 200°C	IEC 60950-1	Tested with appliance UL E180908
Varistor MOV1 (Optional)	Thinking Electronic Industrial Co., Ltd.	TVR10471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 2500A	IEC 61051-2 IEC 60950-1	VDE005944 UL E314979
Alt. use	Thinking Electronic Industrial Co., Ltd.	TVR14471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 4500A	IEC 61051-2 IEC 60950-1	VDE005944 UL E314979

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	CENTRA SCIENCE CORP	CNR-10D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 2500A	IEC 61051-2 IEC 60950-1	VDE40008220 UL E316325
Alt. use	CENTRA SCIENCE CORP	CNR-14D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 4500A	IEC 61051-2 IEC 60950-1	VDE40008220 UL E316325
Alt. use	SUCCESS ELECTRONICS CO LTD	SVR10D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 3500A	IEC 61051-2 IEC 60950-1	VDE40030401 UL E330256
Alt. use	SUCCESS ELECTRONICS CO LTD	SVR14D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 6000A	IEC 61051-2 IEC 60950-1	VDE40030401 UL E330256
Alt. use	Lien Shun Electronics Co., Ltd.	10D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 3500A	IEC 61051-2 IEC 60950-1	VDE40005858 UL E309297
Alt. use	Lien Shun Electronics Co., Ltd.	14D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 6000A	IEC 61051-2 IEC 60950-1	VDE40005858 UL E309297

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	CERAMATE TECHNICAL CO LTD	GNR10D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 3500A	IEC 61051-2 IEC 60950-1	VDE40031745 UL E315429
Alt. use	CERAMATE TECHNICAL CO LTD	GNR14D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 6000A	IEC 61051-2 IEC 60950-1	VDE40031745 UL E315429
Alt. use	BRIGHTKING (SHENZHEN) CO LTD	14D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 6000A	IEC 61051-2 IEC 60950-1	VDE40027827 UL E327997
Alt. use	BRIGHTKING (SHENZHEN) CO LTD	10D471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+105°C, Combination pulse current: min. 3500A	IEC 61051-2 IEC 60950-1	VDE40027827 UL E327997
Alt. use	JOYIN CO LTD	10N471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+125°C, Combination pulse current: min. 2500A	IIEC 61051-2 IEC 60950-1	VDE005937 UL E325508
Alt. use	JOYIN CO LTD	14N471K	Max. Continuous voltage: min. 300Vac, Operating temperature: -40~+125°C, Combination pulse current: min. 4500A	IIEC 61051-2 IEC 60950-1	VDE005937 UL E325508

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Photo coupler (U4)	Everlight Electronics Co., Ltd.	EL817	Dti=0.5mm Int. , dcr=6.0mm EXT.dcr=7.7mm, thermal cycling test,110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 132249
Alt. use	Everlight Electronics Co., Ltd.	EL1018	Dti=0.5mm Int. , dcr=6.0mm EXT.dcr=7.7mm, thermal cycling test,110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40028391
Alt. use	COSMO ELECTRONICS CORP	K1010 KP1010	Dti=0.6mm Int. , dcr=4.0mm EXT.dcr=5.0mm, thermal cycling test,115°C Reinforced insulation	IEC/EN 60747-5-2	VDE 101347
Alt. use	COSMO Electronics Corporation	KT1010 KT1018	Dti=0.6mm Int. , dcr=4.0mm EXT.dcr=5.0mm, thermal cycling test,115°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40031267
Alt. use	Lite-On Technology Corporation	LTV-817	Dti=0.8mm Int. , EXT.dcr=7.8mm, thermal cycling test,110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40015248
Alt. use	Lite-On Technology Corporation	LTV-1004	Dti=0.8mm Int. , EXT.dcr=7.8mm, thermal cycling test,110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 138213
Alt. use	Fairchild Semiconductor Pte Ltd	H11A817B	Insulation voltage: 850V; Transient overvoltage: 6000V; CTI175; Int. Cr/ Ext. Cr: ≥7.0/ 7.0 mm; 30/110/21 Reinforced insulation	IEC/EN 60747-5-2	VDE 40026857

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Fairchild Semiconductor Pte Ltd	FOD817B	Insulation voltage: 850V; Transient overvoltage: 6000V; CTI175; Int. Cr/ Ext. Cr: ≥7.0/ 7.0 mm; 30/110/21 Reinforced insulation	IEC/EN 60747-5-2	VDE 40026857
Alt. use	SHARP CORP ELECTRONIC COMPONENTS AND DEVICES BU	PC817	Insulation voltage: 890V; Transient overvoltage: 9000V Int. Cr/ Ext. Cr: 7.62/ 7.62 mm; 30/110/21 Reinforced insulation	IEC/EN 60747-5-2	VDE 40008087
Alt. use	Bright Led Electronics Corp.	BPC-817 A/B/C/D/L	Dti=0.4mm EXT. dcr=7.0mm, thermal cycling test, 110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40007240
Alt. use	Bright Led Electronics Corp.	BPC-817 M	Dti=0.4mm EXT. dcr=7.0mm, thermal cycling test, 110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40007240
Alt. use	Bright Led Electronics Corp.	BPC-817 S	Dti=0.4mm EXT. dcr=7.0mm, thermal cycling test, 110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40007240
Alt. use	TOSHIBA ELECTRONIC DEVICES & STORAGE CORPORATION	TLP781F	Dti > 0.4mm, Ext cr > 8.0mm, Isolation 3000Vac min., 110°C min., Thermal cycling test. Reinforced insulation	IEC/EN 60747-5-2	VDE 40021173
Earthing wire for Class I model series	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIE S CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C,	IEC/EN 60950-1	Tested with appliance UL E237831

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C,	IEC/EN 60950-1	Tested with appliance UL E333601
Alt. use	YONG HAO ELECTRICAL INDUSTRY CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C,	IEC/EN 60950-1	Tested with appliance UL E240426
Alt. use	SHENG YU ENTERPRISE CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C,	IEC/EN 60950-1	Tested with appliance UL E219726
Alt. use	KUNSHAN XINGHONGME NG ELECTRONIC CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C,	IEC/EN 60950-1	Tested with appliance UL E315421
Alt. use	SUZHOU YEMAO ELECTRONIC CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C,	IEC/EN 60950-1	Tested with appliance UL E353532
Alt. use	SHENG YU ENTERPRISE CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C,	IEC/EN 60950-1	Tested with appliance UL E219726
Heat-shrinkable tubing (Optional)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR, RSFR-H, RSFR-HPF	600V, 125°C, VW-1	IEC/EN 60950-1 UL 224	Tested with appliance UL E203950
Alt. use	QIFURUI ELECTRONICS CO	QFR-h	600V, 125°C, VW-1	IEC/EN 60950-1 UL 224	Tested within appliance UL E225897
Alt. use	DONGGUAN SALIPT CO LTD	SALIPT S-901-300 SALIPT S-901-600	Min. 300V, 125°C, VW-1	IEC/EN 60950-1 UL 224	Tested within appliance UL E209436

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2 (+) K-2 (CB)	Min. 300V, 125°C, VW-1	IEC/EN 60950-1 UL 224	Tested within appliance UL E214175
Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	Min. 300V, 125°C, VW-1	IEC/EN 60950-1 UL 224	Tested within appliance UL E180908
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) For all transformers under all manufacturers.					

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

1.6.2	TABLE: Electrical data (in normal conditions)						P
Model: GTM96605-G2A1-R3A							
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
90	0.603	--	28.57	F1, F2	0.603	Normal Load 5.0VDC, 4.6A	
100	0.550	1.5	28.46	F1, F2	0.550		
240	0.280	1.5	28.53	F1, F2	0.280		
264	0.261	--	28.58	F1, F2	0.261		
90	0.723	--	33.09	F1, F2	0.723	Normal Load 5.8VDC, 4.6A	
100	0.657	1.5	33.09	F1, F2	0.657		
240	0.327	1.5	33.07	F1, F2	0.327		
264	0.302	--	32.91	F1, F2	0.302		
90	0.969	--	47.27	F1, F2	0.969	Normal Load 9.0VDC, 4.4A	
100	0.876	1.5	46.97	F1, F2	0.876		
240	0.433	1.5	46.66	F1, F2	0.433		
264	0.403	--	46.86	F1, F2	0.403		
90	1.150	--	56.63	F1, F2	1.150	Normal Load 12.0VDC, 4.0A	
100	1.018	1.5	55.35	F1, F2	1.018		
240	0.499	1.5	54.65	F1, F2	0.499		
264	0.467	--	55.47	F1, F2	0.467		
90	1.356	--	62.41	F1, F2	1.356	Normal Load 15.0VDC, 3.6A	
100	1.206	1.5	61.81	F1, F2	1.206		
240	0.565	1.5	61.06	F1, F2	0.565		
264	0.524	--	61.30	F1, F2	0.524		
90	1.382	--	67.84	F1, F2	1.382	Normal Load 20.0VDC, 3.0A	
100	1.230	1.5	67.25	F1, F2	1.230		
240	0.595	1.5	66.77	F1, F2	0.595		
264	0.552	--	67.01	F1, F2	0.552		

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

1.6.2	TABLE: Electrical data (in normal conditions)					P
Model: GTM96605-G2A3*-R3A						
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	0.574	--	25.91	F1, F2	0.574	Normal Load 3.6VDC, 4.6A
100	0.517	1.5	25.49	F1, F2	0.517	
240	0.261	1.5	25.58	F1, F2	0.261	
264	0.244	--	25.75	F1, F2	0.244	
90	0.891	--	40.92	F1, F2	0.891	Normal Load 6.7VDC, 4.6A
100	0.799	1.5	40.63	F1, F2	0.799	
240	0.390	1.5	40.30	F1, F2	0.390	
264	0.363	--	40.44	F1, F2	0.363	
90	1.313	--	60.46	F1, F2	1.313	Normal Load 10.9VDC, 4.4A
100	1.168	1.5	59.76	F1, F2	1.168	
240	0.546	1.5	58.67	F1, F2	0.546	
264	0.516	--	60.30	F1, F2	0.516	
90	1.410	--	65.94	F1, F2	1.410	Normal Load 13.5VDC, 4.0A
100	1.278	1.5	65.26	F1, F2	1.278	
240	0.591	1.5	64.12	F1, F2	0.591	
264	0.548	--	64.37	F1, F2	0.548	
90	1.463	--	68.05	F1, F2	1.463	Normal Load 16.0VDC, 3.6A
100	1.326	1.5	67.29	F1, F2	1.326	
240	0.609	1.5	66.19	F1, F2	0.609	
264	0.565	--	66.49	F1, F2	0.565	
90	1.503	--	70.31	F1, F2	1.503	Normal Load 18.8VDC, 3.2A
100	1.373	1.5	69.57	F1, F2	1.373	
240	0.629	1.5	68.72	F1, F2	0.629	
264	0.584	--	68.97	F1, F2	0.584	
Supplementary information:						

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

2.1.1.7	TABLE: stored discharge on capacitors test			P
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments
System on	0.47	0.216	0.474	Vpeak=352V, 37%* V peak = 130.24V
Note(s): Overall capacity: 0.47 μ F (CX1=0.47 μ F), bleed resistance: R1=R2=R3=R4=1M Ω ;				

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.		
GTM96605-G2A1-R3A				
Output (+ and -)	--	20.04	T1 winding (Pin1-Pin2), optocoupler	
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)			
T1 winding (Pin1-Pin2)	Unit shut down immediately, no output voltage.			
Optocoupler	Unit shut down immediately, no output voltage.			
supplementary information:				

2.4	TABLE: limited Current Circuits Test				P
Condition:	Measured between	Voltage (Vp/Vdc)	Current (mA)	Circuit capacitance (Uf)	Remarks
Normal	CY2 sec. pin to earth	116mVpeak	0.232 Max.	3300pF	<0.7mA
supplementary information:					

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

2.5	TABLE: Limited power sources					P
Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Uoc (V)	I _{sc} (A)		VA		
		Meas.	Limit	Meas.	Limit	
GTM96605-G2A3*-R3A (Normal Load 6.7VDC, 4.6A)						
Output Oc	6.80	--	--	--	--	
Output Ol	--	5.193	8	33.45	100	
Single fault: Primary current limitation disabled. (R16 short)	--	0	--	0	100	
GTM96605-G2A1-R3A (Normal Load 20.0VDC, 3.0A)						
Output Oc	20.04	--	--	--	--	
Output Ol	--	4.005	8	79.54	100	
Single fault: Primary current limitation disabled. (R16 short)	--	0	--	0	100	
supplementary information: Sc=Short circuit, Oc=Open circuit, Ol=over loaded						

2.6.3.4	TABLE: ground continue test		P
Location	Resistance measured (Ω)	Comments	
Designated protective bonding conductor to inlet protective earthing conductor	0.03	At 32A, 2 minutes	
Designated protective bonding conductor to inlet protective earthing conductor	0.05	At 40A, 2 minutes (UL)	
supplementary information:			

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)	
L to N before fuse(FI)	352	240	2.22*	5.52	2.4	5.52	
Two poles of fuse(FI)	352	240	2.22*	2.55	2.4	2.55	
Between L and primary part (FI)	352	240	2.22*	3.48	2.4	3.48	
Between two pins of CY1 on PCB trace(BI)	352	240	2.96*	4.43	2.96**	4.43	

IEC 60950-1							
Clause	Requirement + Test			Result - Remark			Verdict
Between two pins of CY2 on PCB trace(SI)	352	240	2.96*	4.62	2.96**	4.62	
Live parts to accessible parts(RI)	352	240	5.92*	6.33	5.92**	6.33	
Primary to functional earth (Class I)(RI)	352	240	5.92*	6.15	5.92**	6.15	
Primary circuits to secondary circuits(RI)	352	240	5.92*	6.42	5.92**	6.42	
Primary winding to secondary winding(RI)	352	240	5.92*	6.76	5.92**	6.76	
Secondary winding to core(RI)	352	240	5.92*	7.25	5.92**	7.25	
Core to secondary parts(RI)	352	240	5.92*	7.25	5.92**	7.25	
Supplementary information: *Required value was multiplied by the factor 1.48 due to the maximum specified altitude of 5000m **Required creepage not less than required clearance							

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)	
Plastic enclosure	352	240	3000	0.4	2.0	
Bobbin	352	240	3000	0.4	Min. 0.45	
Thin sheet material at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required layers	Layers	
Insulation tape around transformer	352	240	3000	2	2	
Supplementary information:						

4.5	TABLE: Thermal requirements			P
Supply voltage (V)	90	264		—
Ambient T _{min} (°C)	40	40		—
Model	GTM96605-G2A3*-R3A (Normal Load 6.7VDC, 4.6A)			—
Maximum measured temperature T of part/at.....:	T (°C)			Allowed T _{max} (°C)
AC inlet	54	50		75
Varistor MOV1	65	59		105
Line chock of LF2	84	70		110
X-capacitor(CX1)	74	65		100
E-capacitor C1	84	75		105

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
PCB under BD1	76	68	130
Transformer (T1) Winding	95	91	110
Transformer (T1) Core	87	84	Ref.
Opto coupler U4	79	76	110
CY1 body	83	80	125
Output cord	51	52	105
Enclosure inside above Transformer	66	64	90
Enclosure outside above Transformer	61	59	77

	Supply voltage (V)	90	264	—
	Ambient T _{min} (°C)	40	40	—
	Model	GTM96605-G2A3*-R3A (Normal Load 10.9VDC, 4.4A)		—
	Maximum measured temperature T of part/at.....:	T (°C)		Allowed T _{max} (°C)
	AC inlet	61	54	75
	Varistor MOV1	78	66	105
	Line chock of LF2	101	81	110
	X-capacitor(CX1)	91	75	100
	PCB under BD1	94	76	130
	E-capacitor C1	100	87	105
	Transformer (T1) Winding	106	99	110
	Transformer (T1) Core	101	92	Ref.
	Opto coupler U4	94	85	110
	CY1 body	101	90	125
	Output cord	53	53	105
	Enclosure inside above Transformer	79	71	90
	Enclosure outside above Transformer	71	65	77

	Supply voltage (V)	90	264	—
	Ambient T _{min} (°C)	40	40	—
	Model	GTM96605-G2A3*-R3A (Normal Load 13.5VDC, 4.0A)		—
	Maximum measured temperature T of part/at.....:	T (°C)		Allowed T _{max} (°C)
	AC inlet	62	54	75
	Varistor MOV1	80	66	105

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Line chock of LF2	104 82	110
	X-capacitor(CX1)	94 75	100
	PCB under BD1	96 77	130
	E-capacitor C1	101 91	105
	Transformer (T1) Winding	106 102	110
	Transformer (T1) Core	101 97	Ref.
	Opto coupler U4	94 85	110
	CY1 body	102 90	125
	Output cord	51 51	105
	Enclosure inside above Transformer	80 71	90
	Enclosure outside above Transformer	71 65	77

	Supply voltage (V)	90	264	—
	Ambient T _{min} (°C)	40	40	—
	Model	GTM96605-G2A3*-R3A (Normal Load 16VDC, 3.6A)		—
	Maximum measured temperature T of part/at.....:	T (°C)		Allowed T _{max} (°C)
	AC inlet	64	55	75
	Varistor MOV1	83	68	105
	Line chock of LF2	101	86	110
	X-capacitor(CX1)	96	78	100
	PCB under BD1	99	80	130
	E-capacitor C1	100	87	105
	Transformer (T1) Winding	106	100	110
	Transformer (T1) Core	101	96	Ref.
	Opto coupler U4	96	88	110
	CY1 body	104	93	125
	Output cord	51	50	105
	Enclosure inside above Transformer	82	74	90
	Enclosure outside above Transformer	73	67	77

	Supply voltage (V)	90	264	—
	Ambient T _{min} (°C)	40	40	—
	Model	GTM96605-G2A3*-R3A (Normal Load 18.8VDC, 3.2A)		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Maximum measured temperature T of part/at.....:	T (°C)	
	AC inlet	64	57
	Varistor MOV1	83	70
	Line chock of LF2	103	83
	X-capacitor(CX1)	97	80
	PCB under BD1	100	82
	E-capacitor C1	99	80
	Transformer (T1) Winding	107	100
	Transformer (T1) Core	103	97
	Opto coupler U4	105	89
	CY1 body	103	95
	Output cord	50	49
	Enclosure inside above Transformer	82	76
	Enclosure outside above Transformer	73	70
			Allowed T _{max} (°C)
			75
			105
			110
			100
			130
			105
			110
			Ref.
			110
			125
			105
			90
			77

	Supply voltage (V)	90	264	—
	Ambient T _{min} (°C)	40	40	—
	Model	GTM96605-G2A1-R3A (Normal Load 20.0VDC, 3.0A)		—
	Maximum measured temperature T of part/at.....:	T (°C)		Allowed T _{max} (°C)
	AC inlet	63	57	75
	Varistor MOV1	79	68	105
	Line chock of LF2	105	87	110
	X-capacitor(CX1)	91	76	100
	PCB under BD1	98	87	130
	E-capacitor C1	102	94	105
	Transformer (T1) Winding	104	100	110
	Transformer (T1) Core	101	97	Ref.
	Opto coupler U4	95	90	110
	CY1 body	88	84	125
	Output cord	48	48	105
	Enclosure inside above Transformer	85	79	90
	Enclosure outside above Transformer	69	66	77

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

Supplementary information:							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
Supplementary information:							

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
--	--	--	--	--	--	
Supplementary information: refer to 1.5.1						

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
L/N to enclosure (with metal foil)	0.083	0.25	--	
L/N to output	0.164	0.25	--	
supplementary information:				

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	
Primary circuit to body (RI)	AC	3000	No	
Primary circuit to secondary circuit (RI)	AC	3000	No	
L and N (F1)	AC	1500	No	
Primary winding to secondary winding of T1 (RI)	AC	3000	No	
Secondary winding to core (RI)	AC	3000	No	
Insulation tape around transformer per layer	AC	3000	No	
Primary and secondary of Y1 capacitor	DC	4242	No	
Supplementary information:				

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C)	25, if no else specified	—
	Power source for EUT: Manufacturer, model/type, output rating	Chroma, 61512, 18kVA	—

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
GTM96605-G2A3*-R3A (Normal Load 6.7VDC, 4.6A)						
Output	OI	90V	3'01"	F1, F2	0.965	Output overload to 5.181A, no hazard. T1 winding: 92°C Output cord: 41°C External enclosure: 49°C
Output	OI	264V	3'12"	F1, F2	0.385	Output overload to 5.129A, no hazard. T1 winding: 81°C Output cord: 39°C External enclosure: 44°C
GTM96605-G2A3*-R3A (Normal Load 10.9VDC, 4.4A)						
Output	OI	90V	2'51"	F1, F2	1.212	Output overload to 4.534A, no hazard. T1 winding: 101°C Output cord: 38°C External enclosure: 57°C
Output	OI	264V	2'59"	F1, F2	0.540	Output overload to 4.977A, no hazard. T1 winding: 93°C Output cord: 38°C External enclosure: 51°C
GTM96605-G2A3*-R3A (Normal Load 13.5VDC, 4.0A)						
Output	OI	90V	3'15"	F1, F2	1.346	Output overload to 4.250A, no hazard. T1 winding: 108°C Output cord: 37°C External enclosure: 61°C
Output	OI	264V	3'27"	F1, F2	0.548	Output overload to 4.252A, no hazard. T1 winding: 89°C Output cord: 38°C External enclosure: 51°C
GTM96605-G2A3*-R3A (Normal Load 16.0VDC, 3.6A)						
Output	OI	90V	3'35"	F1, F2	1.387	Output overload to 3.799A, no hazard. T1 winding: 104°C Output cord: 37°C External enclosure: 60°C
Output	OI	264V	3'18"	F1, F2	0.556	Output overload to 3.754A, no hazard. T1 winding: 89°C Output cord: 36°C External enclosure: 54°C
GTM96605-G2A3*-R3A (Normal Load 18.8VDC, 3.2A)						

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Output	OI	90V	3'13"	F1, F2	1.434	Output overload to 3.424A, no hazard. T1 winding: 105°C Output cord: 37°C External enclosure: 62°C
Output	OI	264V	3'19"	F1, F2	0.588	Output overload to 3.426A, no hazard. T1 winding: 92°C Output cord: 36°C External enclosure: 58°C
GTM96605-G2A1-R3A (Normal Load 20.0VDC, 3.0A)						
Output	OI	90V	3'06"	F1, F2	1.497	Output overload to 3.366A, no hazard. T1 winding: 102°C Output cord: 36°C External enclosure: 60°C
Output	OI	264V	3'11"	F1, F2	0.593	Output overload to 3.356A, no hazard. T1 winding: 91°C Output cord: 34°C External enclosure: 53°C
BD1 Pin 1-2	Sc	90V/264V	0.1"	F1, F2	0	Unit shutdown, immediately. F1, F2 open. No hazard.
C1	Sc	90V/264V	0.1"	F1, F2	0	Unit shutdown, immediately. F1, F2 open. No hazard.
U4A	Sc	90V/264V	0.1"	F1, F2	0	Unit shutdown, immediately. Unit is recoverable. No damage.
U4B	Sc	90V/264V	0.1"	F1, F2	0	Unit shutdown, immediately. Unit is recoverable. No damage.
Q1	Sc	90V/264V	0.1"	F1, F2	0	Unit shutdown, immediately. F1, F2 open. No hazard.
Q3	Sc	90V/264V	0.1"	F1, F2	0	Unit shutdown, immediately. F1, F2 open. No hazard.
C14	Sc	90V/264V	0.1"	F1, F2	0	Unit shutdown, immediately. Unit is recoverable. No damage.
Supplementary information: "Sc" means short-circuited test, "OI" means overload test, "Oc" means open-circuited test; "Uoc" means output voltage without load.						

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

C.2	TABLE: transformers	P
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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)
T1	Reinforced (Sec. – core)	352	240	3000	4.0	5.0	Triple insulated winding comply with Annex U
T1	Reinforced (Pri. – Sec.)	352	240	3000	4.0	5.0	Triple insulated winding comply with Annex U
Loc.	Tested insulation			Test voltage / V	Measured clearance / mm	Measured creepage dist. / mm	Measured distance thr. insul. / mm; number of layers
T1	Reinforced (Sec. – core)			3000	7.25	7.25	2
T1	Reinforced (Pri. – Sec.)			3000	6.76	6.76	2
supplementary information:							

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

C.2	TABLE: transformers		P
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Transformer

1. DIMENSION (UNIT : mm)

TF093 E243347
G7X-130-TM HPV YVW

Label

31.0 Max

20mm MAX

3.2±0.3mm

26.0 Max

4±1mm

21+3/-2 mm

3.5±0.3

PIN 1

PIN 12

6mm width Copper Foil Shield
铜箔 N6 FINISH

Bottom View

B Black

A Clear

Remarks:

- PIN 4,5,6,7,8,9 连骨架剪除, PIN 11 空脚。
- 上下磁芯需裹覆 (如图), 中柱需贴一片胶带。
- 成品沿磁芯包一圈 6mm 自粘铜箔, N6 尾线 C 焊接于 PIN1-6 脚侧。
- 沿磁芯方向包胶带 16mm*2T, 最后沿线圈方向包胶带 11mm*1T。
- A、B 直径 1.45mm MAX。

2. SHCEMATIC:

W2 Shield Winding

10 W1

Tap

12 W7

1 W4

2 W5

3 W6

Clear Tubing

2mm Flying Wires

Black Tubing

Core Wrap Shield

Allow W6 finish to end (2x) top sheet

W7, Main Pri, 14T of 2X 0.30mm
W4, W5, W6 Tapped Primary Vcc, EMI Compensation (Single Layer for All)
W3, Secondary, 6T of 4X TIW (2 Layers)
W2, Wire Structure Shield, 20T of 2X 0.18mm
W1, Main Pri, 26T of 2X 0.30mm (2 Layers)

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

C.2	TABLE: transformers(Cont')		P
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4. WINDING SPEC

NO	TERMINAL		TURNS	WIRE	STRANDS	INSULATION MATERIAL	INSULATION LAYERS
	S	F					
N1	10	X	28	2UEW ϕ 0.30	2	PET 0.025	11.0 \times 2T
N2	3		20	2UEW ϕ 0.18	2	PET 0.025	11.0 \times 2T
N3	A	B	6	TRWB ϕ 0.45	4	PET 0.025	11.0 \times 3T
N4	1	2	14	2UEW ϕ 0.20	1	PET 0.025	11.0 \times 2T
N5	2	3	7	2UEW ϕ 0.20	1	PET 0.025	
N6	3	C	13	2UEW ϕ 0.20	1	PET 0.025	
N7	X	12	14	2UEW ϕ 0.30	2	PET 0.025	

Remarks:

1. 所有引线加套管。
2. N4、5、6 同层绕制，C 从顶部出线接外屏蔽。
3. X 最后拧线焊接，外包 11mm 胶带*2T。

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

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_1E
Attachment Originator	SGS Fimko Ltd
Master Attachment	Date 2013-09
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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																																																																								
	<p>Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"</p>		P																																																																								
<p>Contents</p> <p>(A2:2013)</p>	<p>Add the following annexes:</p> <p>Annex ZA (normative) Normative references to international publications with their corresponding European publications</p> <p>Annex ZB (normative) Special national conditions</p> <p>Annex ZD (informative) IEC and CENELEC code designations for flexible cords</p>		P																																																																								
<p>General</p>	<p>Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">1.4.8</td> <td style="width: 15%;">Note 2</td> <td style="width: 15%;">1.5.1</td> <td style="width: 15%;">Note 2 & 3</td> <td style="width: 15%;">1.5.7.1</td> <td style="width: 15%;">Note</td> </tr> <tr> <td>1.5.8</td> <td>Note 2</td> <td>1.5.9.4</td> <td>Note</td> <td>1.7.2.1</td> <td>Note 4, 5 & 6</td> </tr> <tr> <td>2.2.3</td> <td>Note</td> <td>2.2.4</td> <td>Note</td> <td>2.3.2</td> <td>Note</td> </tr> <tr> <td>2.3.2.1</td> <td>Note 2</td> <td>2.3.4</td> <td>Note 2</td> <td>2.6.3.3</td> <td>Note 2 & 3</td> </tr> <tr> <td>2.7.1</td> <td>Note</td> <td>2.10.3.2</td> <td>Note 2</td> <td>2.10.5.13</td> <td>Note 3</td> </tr> <tr> <td>3.2.1.1</td> <td>Note</td> <td>3.2.4</td> <td>Note 3.</td> <td>2.5.1</td> <td>Note 2</td> </tr> <tr> <td>4.3.6</td> <td>Note 1 & 2</td> <td>4.7</td> <td>Note 4</td> <td>4.7.2.2</td> <td>Note</td> </tr> <tr> <td>4.7.3.1</td> <td>Note 2</td> <td>5.1.7.1</td> <td>Note 3 & 4</td> <td>5.3.7</td> <td>Note 1</td> </tr> <tr> <td>6</td> <td>Note 2 & 5</td> <td>6.1.2.1</td> <td>Note 2</td> <td>6.1.2.2</td> <td>Note</td> </tr> <tr> <td>6.2.2</td> <td>Note</td> <td>6.2.2.1</td> <td>Note 2</td> <td>6.2.2.2</td> <td>Note</td> </tr> <tr> <td>7.1</td> <td>Note 3</td> <td>7.2</td> <td>Note</td> <td>7.3</td> <td>Note 1 & 2</td> </tr> <tr> <td>G.2.1</td> <td>Note 2</td> <td>Annex H</td> <td>Note 2</td> <td></td> <td></td> </tr> </table>	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	4.7.3.1	Note 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
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1.5.7.1	Note	6.1.2.1	Note 2																																																																								
6.2.2.1	Note 2	EE.3	Note																																																																								
<p>General</p> <p>(A2:2013)</p>	<p>Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">2.7.1</td> <td style="width: 15%;">Note *</td> <td style="width: 15%;">2.10.3.1</td> <td style="width: 15%;">Note 2</td> <td></td> <td></td> </tr> <tr> <td>6.2.2.</td> <td>Note</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>* Note of secretary: Text of Common Modification remains unchanged.</p>	2.7.1	Note *	2.10.3.1	Note 2			6.2.2.	Note						P																																																												
2.7.1	Note *	2.10.3.1	Note 2																																																																								
6.2.2.	Note																																																																										
<p>1.1.1</p> <p>(A1:2010)</p>	<p>Replace the text of NOTE 3 by the following.</p> <p>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.</p>		P																																																																								

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>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.</p> <p>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.</p>		N/A
(A12:2011)	<p>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</p>		N/A
1.5.1 (Added info*)	<p>Add the following NOTE:</p> <p>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 *</p>		P
1.7.2.1 (A1:2010)	<p>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.</p>		N/A
1.7.2.1 (A12:2011)	<p>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.</p>		N/A
	<p>Zx Protection against excessive sound pressure from personal music players</p>		N/A

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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>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.</p> <p>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.</p> <p>The requirements do not apply to: hearing aid equipment and professional equipment;</p> <p>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.</p>		N/A
	<p>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.</p> <p>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.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		N/A


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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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</p>		N/A

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <ol style="list-style-type: none"> 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. <p>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.</p> <p>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.</p> <p>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.</p>		N/A

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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."</p>  <p>Figure 1 – Warning label (IEC 60417-6044)</p> <p>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.</p>		N/A
	<p>Zx.4 Requirements for listening devices (headphones and earphones)</p> <p>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.</p>		N/A N/A

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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.</p> <p>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.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A
	<p>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.</p> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p>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.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N/A

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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>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):</p> <p>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;</p> <p>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;</p>		P
	<p>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.</p> <p>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.</p>		P
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	<p>Replace "60245 IEC 53" by "H05 RR-F";</p> <p>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F";</p> <p>"60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".</p> <p>In Table 3B, replace the first four lines by the following:</p> <p>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 </p> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition ^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>		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		N/A

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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		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 (artificial optical 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.		N/A
Bibliography	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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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.		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.		N/A
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.		N/A

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ZB ANNEX (normative)			
SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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).		N/A
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

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>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:</p> <p>In Finland: "Laitte on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N/A
1.7.2.1 (A11:2009)	<p>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.</p> <p>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.</p> <p>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:</p> <p>"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)."</p>		

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ZB ANNEX (normative)			
SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“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.”</p> <p>Translation to Swedish:</p> <p>”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.”</p>		N/A
1.7.2.1 (A2:2013)	<p>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.</p> <p>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.”</p>		N/A
1.7.5 1.7.5 (A11:2009)	<p>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.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>		N/A

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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		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.		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.		N/A
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.		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.		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		N/A

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>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:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p>		
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>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.</p> <p>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.</p>		N/A

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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1 (A2:2013)	<p>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.</p> <p>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.</p> <p>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.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N/A
3.2.1.1	<p>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.</p> <p>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.</p> <p>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.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N/A
3.2.1.1	<p>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.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A

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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.		N/A
3.2.4	In Switzerland , for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the United Kingdom , a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.		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

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> 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. 		N/A
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - 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. <p>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</p> <ul style="list-style-type: none"> - 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. 		N/A

Appendix No.1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - 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	<p>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.</p>		N/A
7.2	<p>In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N/A
7.3 (A11:2009)	<p>In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>		N/A

APPENDIX No.2: National differences for Singapore			
The safety authority's requirements stipulated in chapter 7 of the Singapore Consumer Protection Safety Requirements) Registration Scheme Information (2002 Edition, updated: 24 January 2014)			
Item No	Requirement	Result - Remark	Verdict
1	Test certificate / Test report more than three (3) years old shall be rejected.		P
2	The additional function must be tested to its applicable safety standard.		P
3	All appliances must be tested to 230 VAC, 50Hz	The voltage range includes 230Vac, 50Hz	P
4	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.	No voltage selector.	N/A
5	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.		P
6	All Class I appliances must be fitted with 3-pin mains plugs complied with SS 145/SS 472 that are registered with the Safety Authority.	For class I model series	P
7	a) All Class II appliances must be fitted with 2-pin mains plug (Appendix T) complied with EN 50075. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are complied with SS 145 and registered with the Safety Authority.	For class II model series	P
8	Electric appliance \geq 3kW must be connected to fixed wiring. All connection to fixed wiring must be in accordance with Code of Practice CP5.	Not exceed 3kW.	N/A
9	Detachable power cord set must be listed in the test report critical component list.		N/A
10	Circuit diagrams must be indicated with component's values for products tested to IEC 60065 and IEC 60950-1.		P
11	Circuit diagrams of the electronic modules in the electrical appliances must be provided.		P
12	Controlled goods, having an enclosure, which is shaped and decorated so that it is likely to be treated as a toy by children, shall not be accepted for certification and registration.	The shape and function are not considered for toy.	N/A

Item No	Requirement	Result - Remark	Verdict
13	Controlled goods with rated voltage that are not suitable for local supply voltage: a) Controlled goods with rated voltage that are not suitable for local supply voltage will not be allowed for registration unless they are supplied with step-down isolating transformer and are tested together with the transformer as a complete set. b) A test to ensure that the controlled goods shutdown/fail safely should the consumer accidentally plugs the product directly into the 230 V mains supply socket outlet without using the isolating stepdown transformer shall be conducted.		N/A
14	Reboil switch No part of the reboil switch is allowed to protrude into the water pot, even if it is located above the maximum water level mark.		N/A
15	3-pin AC adaptor (Appendix U) Test report showing that the 3-pin complied with subclauses 12.1 & 12.3 of SS 246 must be submitted.		N/A
16	2-pin AC adaptor (Appendix U) The 2-pin (Appendix T) shall comply with EN 50075.	See the appendix page.	P
17	Detachable power supply cord set not supplied by Registered Supplier: a) Registered Supplier who is not supplying the detachable power supply cord set together with the AC Adaptor must provide written instruction to its customer on the type of approved detachable power cord set to use and declare to Conformity Assessment Body when applying for Certificate of Conformity. b) This requirement is only applicable to Register Supplier whose core business is supplying AC Adaptor or its Registered Supplier name is affiliated with the AC Adaptor's manufacturer.	No such cord set was used	N/A
18	AC Adaptor incorporated with 13A socket-outlet: Additional tests clauses to 13, 17 and 18 of SS 246 would be required.	No such socket-outlet was used.	N/A
19	CD/DVD ROM (used in personal computer): Test certificate showing that CD/DVD ROM has complied with IEC 60825-1 must be provided.	No such CD/DVD ROM was used.	N/A
20	Modem Card (used in personal computer): Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.	No such Modem Card was used.	N/A
21	Powerline Ethernet Adaptor incorporated with 13A socket-outlet: Additional tests to clauses 13, 17 and 18 of SS 246 would be required.	Not such type adaptor	N/A
22	Ceiling fan and cycle fan: a) These appliances must be tested to sub-clauses 5.7 and 5.8 of SS 360: 1992. b) Installation instruction must mention the 3 expansion bolts for fastening the main suspension, safety cord, expansion bolt with hook for fastening safety cord and mounting plate. (Appendix Q) c) Drawing (Appendix P) to show that the wires within the motor shaft are not stressed must be provided for ceiling fan only.		N/A

Item No	Requirement	Result - Remark	Verdict
23	Decorative ceiling fan: Decorative ceiling fan submitted to Conformity Assessment Body (CAB) for certification shall subject to conformity check. CAB shall request a new sample and check the identical safety components are listed in the test report of IEC 60335-2-80. The check also covers the minimum dimension requirements and availability of the safety cord indicated in the test report of subclauses 5.7 & 5.8 of SS 360.		N/A
24	Portable/wall socket-outlet and portable cable reel: a) If residual current device (RCD) is incorporated, its tripping current must be less than 30mA and operating time must be less than 0.1 second and testing to subclauses 9.9.2.1, 9.9.2.2, 9.9.2.3 and 9.16 of SS 97: Part 1: 2000 are required. b) The shutters screening the current-carrying socket contacts shall not be opened by the insertion of any corresponding SINGLE pin of the plug into any currentcarrying socket aperture.		N/A
25	Wall switched socketoutlet (2 x single socketoutlet): Single socket-outlet with 2-gang faceplate/frame must be fulfilled with the test requirements as 2-gang socketoutlet.		N/A
26	Remote controlled wall socket-outlet: Remote controlled wall socket-outlet shall not be allowed for registration.		N/A
27	Roaster: A metal ring (Appendix V) must be provided to prevent the roaster from falling off in case of the glass bowl shattered. If supplier has other method, approval would be required from the Safety Authority. Note: This requirement is not applicable to roaster that is provided with metal bowl.		N/A
28	Test pressure of town gas for gas appliances: All gas appliances must be tested to 20 mbar for town gas.		N/A
29	Specifications of LPG and Town Gas: All gas appliances must be tested to the specifications stated on Appendix W.		N/A
30	Gas appliances tested to EN 30-1-1: 1998/2008: Testing to sub-clause 6.1.6 (Temperature of the LPG cylinder and its compartment) and sub-clause 6.2.1 (Ignition, cross-lighting and flame stability) must be carried out.		N/A
31	Flame failure device (FFD) incorporated in gas appliances: a) Test report/certificate showing that the FFD complied with EN 126:1995 or EN 125: 1991 for gas appliance tested to EN 30-1-1 or AG 204: 1984 for gas appliance tested to AG 101 at component level must be provided. b) Testing to sub-clause 6.1.3 of EN 30-1-1 or subclause 3.6.13 of AG 101 at set level must be carried out.		N/A
32	Gas oven: It is compulsory for all gas ovens to be fitted with flame failure device.		N/A


Item No	Requirement	Result - Remark	Verdict
33	Toughened glass gas hob: a) A brochure, entitled 'Toughened Glass – A Shattering Experience?' must be included for each toughened glass gas hob put up for sale. (Order for the brochure can be placed with the Safety Authority) b) Toughened glass gas hob tested to EN 30-1-1 would require any of the following testing and compliance: sub-clauses 2.1.15, 2.1.16, 2.1.18, 2.10.9.5, 2.11.2.2 & 5.7.5 of AG101: 1998 / AS 4551: 1998 sub-clauses 2.1.16(a), 2.1.17, 2.1.19, 2.10.9(e), 2.11.2.2 & 5.7.5 of AG101: 2000 / AS 4551: 2000 sub-clauses 2.1.16(a), 2.1.17, 2.1.19, 2.10.8.3(e), 2.11.3(g) & 5.8.4 of AS 4551: 2008		N/A
34	Gasket for elbow joint of gas cooker: Installation instruction must mention about the fixing of gasket for the elbow joint, if applicable. (Appendix R)		N/A
35	Glass-ceramic gas hob with enclosed covered burner (simulated gas explosion test): The gas hob must be subject to 'simulated gas explosion' test. The hob is filled with an explosive mixture of gas and detonated with a source of ignition.		N/A
36	Material of gas hob cook top: Different material requires separate certification and registration. Eg. stainless steel, enamel, stone, toughened-glass, ceramic-glass		N/A
37	Renewal of registration for gas cookers: Application for renewal of registration of gas cookers shall be supported with a valid new test report that is issued within 3 years when submitting to Conformity Assessment Body for re-certification before registration.		N/A
38	Registration of RCCB is limited to those with 30 mA sensitivity and the operating time must be less than 0.1 second. Electronic RCCB will not be accepted for registration.		N/A
39	Instantaneous electric water heater and mains pressure electric storage water heater: a) Heating elements used must not be of the 'bareelement' type. b) Registered Supplier must declare that the water heater is not using bare heating element when applying Certificate of Conformity with Conformity Assessment Body.		N/A
40	Water heater incorporated with residual current device(RCD): Testing to sub-clauses 9.9.2.1, 9.9.2.2, 9.9.2.3 and 9.16 of SS 97: Part 1: 2000 are required.		N/A

Item No	Requirement	Result - Remark	Verdict
41	<p>Multi-way adaptor with 3-pin socket-outlets or combination of 3-pin and 2-pin socket-outlets:</p> <p>a) The socket contacts of the adaptor shall only accept 13A 3-pin mains plug complying with SS 145 and/or 2.5A 2-pin mains plug complying with EN 50075.</p> <p>b) The shutters screening the current-carrying socket contacts shall not be opened by the insertion of any corresponding SINGLE pin of the plug into any current-carrying socket aperture.</p> <p>c) A barrier or other acceptable means shall be provided on the engagement surface of the 2.5A 2-pin socket-outlet of the adaptor to PREVENT entry of any types of 2-pin mains plugs except those complying with EN 50075. (note: shutters cannot be regarded as barriers)</p> <p>d) Adaptor incorporates with switch would require additional test to sub-clauses 13.11, 17.1.3 and 18.1.3 of SS 145: Part 2: 1997.</p>	Not such type adaptor	N/A
42	<p>Plasma/LCD display monitor with TV tuner:</p> <p>Plasma/LCD display monitor tested to IEC 60950 would require additional test to clauses 9 (related to antenna only), 10.1, 10.2, 10.3 and 12.5 of IEC 60065.</p>	Not Plasma/LCD display monitor with TV tuner	N/A
43	<p>Child appealing table lamp/standing lamp:</p> <p>Child appealing table/standing lamp will not be allowed for registration unless it is powered by an AC Adaptor.</p> <p>Only the AC Adaptor would need registration.</p>		N/A
44	<p>Hot/warm & cold water dispenser:</p> <p>Hot/warm water dispenser which has below boiling temperature shall be tested to IEC 60335-2-21. Testing to IEC 60335-2-24 shall be required if the water dispenser is incorporated with compressor for dispensing cold water.</p>		N/A


APPENDIX No.3: National differences for Japan

J 60950-1(H29) TEST REPORT (Deviations from IEC 60950-1:2005 + Amd. 1:2009 + Amd. 2:2013) Electrical Appliances and Materials Safety Act Article 8, 9 and Appendix 12.			
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 when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.		N/A
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: <ul style="list-style-type: none"> - 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. <ul style="list-style-type: none"> 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.		N/A
1.3.2	Add the following notes after first paragraph: <p>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.</p> <p>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.</p>		N/A

Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	<p>Replace the first paragraph with the follows:</p> <p>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.</p> <p>Replace Note 1 with the following:</p> <p>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.</p> <p>Note 2 JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope.</p> <p>Add the following after the last paragraph:</p> <p>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.</p> <p>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.</p>		P
1.5.2	<p>Add the following Note 2 after the 4th dashed paragraph:</p> <p>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.</p>		P
1.5.5	<p>Add the following Note after the last paragraph:</p> <p>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.</p>		N/A
1.5.9.1	<p>Add the following in the last of NOTE 1.</p> <p>Gas discharge tube connected in series with VDR may be used.</p>		N/A

Clause	Requirement + Test	Result - Remark	Verdict
1.7	Replace EE.2 and EE.4 with the following: JA.1 Shredder warning JA.3 Shredder power disconnection		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;		P
1.7.2.1	Add the following after 2nd paragraph. Instruction or equipment marking regarding safety shall be written in Japanese unless otherwise permitted in this standard.		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).		N/A
1.7.5	Replace 2nd paragraph with the following. Socket-outlets conforming to JISC8303 are examples of standard power supply outlets.		N/A
1.7.5A	Add the following new clause. after 1.7.5 1.7.5A Appliance Coupler 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 user instruction. "Use only designated cord set attached in this equipment" <i>Example in Japanese:</i> "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 user instruction <i>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 use instruction should provide the information that the cord set is exclusively used with the equipment and not allowed to use with other equipments.</i>		N/A

Clause	Requirement + Test	Result - Remark	Verdict
1.7.14A	<p>Add the following new clause. after 1.7.14</p> <p>1.7.14A Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following or equivalent instructions shall be marked.</p> <p>- the following instruction shall be marked on the mains plug or on the visible place of the main body</p> <p>“Provide an earthing connection”</p> <p><i>Example in Japanese:</i> “必ず接地接続を行ってください。”</p> <p>- the following marking shall be marked on the visible place of the main body or written in the operating instructions:</p> <p>“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.”</p> <p><i>Example in Japanese:</i> 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。</p>		N/A
1.7.14B	<p>Add the following new clause after 1.7.14A</p> <p>1.7.14B Protective earthing conductor used for CLASS 0I equipment</p> <p>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 instruction manual. (See 2.6.3.2)</p>		N/A

Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.1	<p>Replace item b) of 2.1.1.1 with the following.</p> <p>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.</p> <p>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.</p>		N/A
2.5	<p>Replace "IEC 60730-1" with "JIS C 9730-1" (in item b).</p>		N/A
2.6.2	<p>Delete the following line.</p> <p>• the symbol , IEC 60417-5018 (2011-07);</p>		N/A
2.6.3.2	<p>Add the following after 1st paragraph.</p> <p>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.</p> <ul style="list-style-type: none"> - Use of annealed copper wire with 1.6mm diameter or corrosion-inhibiting metal wire equivalent or higher in term of strength and thickness. - Single core cord or single core cable with 1.25mm² or more cross-sectional area 		N/A
2.6.3.5	<p>Add the following after 1st paragraph.</p> <p>However this requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is the formed together with mains plug and appliance connector.</p>		N/A

Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	<p>Replace 1st paragraph with the following.</p> <p>Equipment required to have protective earthing shall have a main protective earthing terminal.</p> <p>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.</p>		N/A
2.6.5.4	<p>Replace the first sentence with the following.</p> <p>Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:</p> <p>Add the following after last paragraph: Note For CLASS 0I EQUIPMENT, 1.7.14A is applied instead of this requirement.</p>		P
2.6.5.8A	<p>Add the following new clause. after 2.6.5.8</p> <p>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.</p> <p>For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip.</p> <p>CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.</p>		N/A
2.7.6	<p>Replace "ISO 3864, No. 5036" with "6.2.4 of JIS S 0101".</p>		N/A
2.10.3.1	<p>Replace the 8th paragraph with the following</p> <p>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.</p> <p>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.</p>		N/A

Clause	Requirement + Test	Result - Remark	Verdict
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.		P
2.10.4.3	<p>Replace the 6th paragraph with the following</p> <p>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.</p> <p>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.</p>		P
2.10.9	Replace "1.4.5" in 3rd paragraph with "1.4.12".		N/A
3.2.3	<p>Add the following after the third paragraph.</p> <p>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.</p>		N/A
3.2.4	<p>Add the following as fourth dash.</p> <p>- 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.</p>		P


Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	<p>Add the following after Note 3:</p> <p>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.</p> <p>Replace the paragraph after Note 3 with the following.</p> <p>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.</p> <p>Add the following after the second paragraph after Note 3:</p> <p>Note 5 For the cross-sectional area of mains cord described in Note 4, relevant Japanese wiring regulation can be applied.</p>		N/A
3.2.5A	<p>Add the following new clause after 3.2.5</p> <p>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.</p> <p>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.</p>		P
3.3.4 Table 3D	<p>Add the following note to Table 3D:</p> <p>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.</p>		N/A

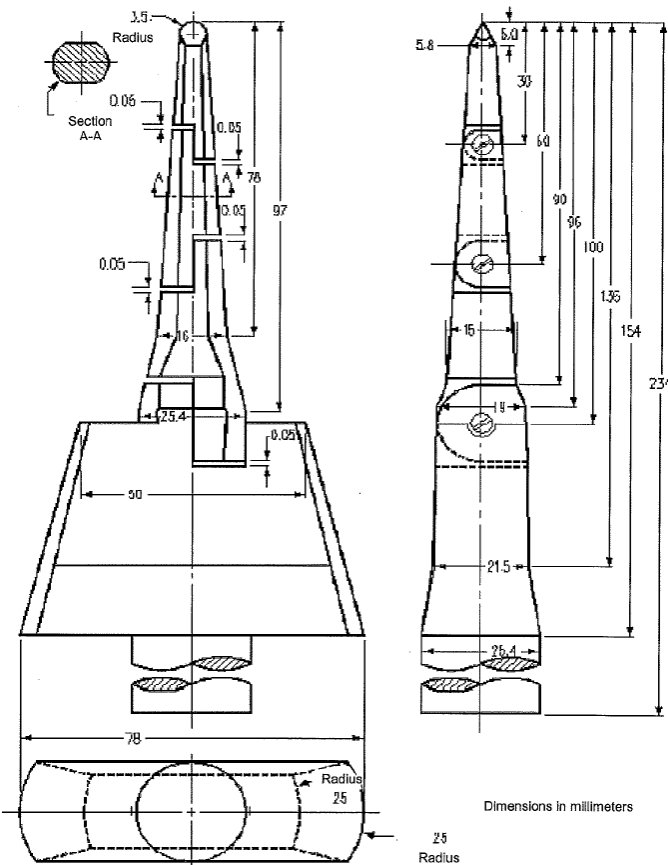
Clause	Requirement + Test	Result - Remark	Verdict
3.3.7	Add the following after the first sentence: This requirement is not applicable to the external earthing terminal of Class 0I equipment.		N/A
4.2.8	Add the following after the first paragraph: Note Intrinsically protected picture tube is required 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.		N/A
4.3.5	Replace 1st 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 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)		P
4.4.2	Replace the paragraph with the following: HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall also comply with Annex JA.		N/A
4.5.3	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.		N/A

Clause	Requirement + Test	Result - Remark	Verdict																																				
5.1.3	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.		N/A																																				
5.1.6	Replace Table 5A. as follows		P																																				
	<table border="1"> <thead> <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> </thead> <tbody> <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 rowspan="2">HAND-HELD</td> <td>Main protective earthing terminal of CLASS I EQUIPMENT</td> <td>0,75</td> <td>-</td> </tr> <tr> <td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td> <td>0,5</td> <td>-</td> </tr> <tr> <td rowspan="2">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>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td> <td>1.0</td> <td>-</td> </tr> <tr> <td rowspan="2">STATIONARY, PLUGGABLE TYPE A</td> <td>Main protective earthing terminal of CLASS I EQUIPMENT</td> <td>3,5</td> <td>-</td> </tr> <tr> <td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td> <td>1,0</td> <td>-</td> </tr> <tr> <td rowspan="2">ALL other STATIONARY EQUIPMENT - 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 I EQUIPMENT</td> <td>3.5 -</td> <td>- 5 % of input current</td> </tr> <tr> <td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td> <td>1.0 -</td> <td>- -</td> </tr> </tbody> </table>	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ^a	Maximum PROTECTIVE CONDUCTOR CURRENT	ALL equipment	Accessible parts and circuits not connected to protective earth ^b	0,25	-	HAND-HELD	Main protective earthing terminal of CLASS I EQUIPMENT	0,75	-	Main protective earthing terminal of CLASS 0 I EQUIPMENT	0,5	-	MOVABLE (other than HAND_HELD, but including TRANSPORTABLE EQUIPMENT)	Main protective earthing terminal of CLASS I EQUIPMENT	3,5	-	Main protective earthing terminal of CLASS 0 I EQUIPMENT	1.0	-	STATIONARY, PLUGGABLE TYPE A	Main protective earthing terminal of CLASS I EQUIPMENT	3,5	-	Main protective earthing terminal of CLASS 0 I EQUIPMENT	1,0	-	ALL other STATIONARY EQUIPMENT - not subject to the conditions of 5.1.7 - subject to the conditions of 5.1.7	Main protective earthing terminal of CLASS I EQUIPMENT	3.5 -	- 5 % of input current	Main protective earthing terminal of CLASS 0 I EQUIPMENT	1.0 -	- -		
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	Main protective earthing terminal of CLASS 0 I EQUIPMENT	1.0 -	- -																																				
	<p>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.</p> <p>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.</p>																																						

Clause	Requirement + Test	Result - Remark	Verdict
Annex G	Replace the paragraph before Table G.2 with the following The above minimum CREEPAGE DISTANCES for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series, JIS C 8283 series, IEC60320 series, JIS C 8303, and Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance in which dimension is comply with JIS C 8283 series, JIS C 8303 or IEC 60309-2.		N/A
Annex V V.1	Replace "3.1.2" in the first line of V.1 with "312" in first line.		P
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.		N/A
Annex BB	This annex is not applicable.		N/A
Annex CC CC.2	Replace the third dashed paragraph with the following: <i>- 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;</i>		N/A
CC.3	Add note at end of CC.3: Note: The fast blow fuse should be the one complying with IEC 60127-2.		N/A

Clause	Requirement + Test	Result - Remark	Verdict
CC.4	<p>Replace the 2nd dashed paragraph with the following: - 10 000 cycles of turning enable on and off with a $100 \Omega \pm 5 \Omega$ resistor and a $425 \mu\text{F} \pm 10 \mu\text{F}$ capacitor in parallel with the output;</p> <p>Replace the 4th dashed paragraph with the following: - 10 000 cycles of turning enable on and off with the input connected to a capacitor rated $425 \mu\text{F} \pm 10 \mu\text{F}$ and shorting the output;</p> <p>Replace the 5th dashed paragraph with the following: -10 000 cycles of turning the input pin on and off with a capacitor rated $425 \mu\text{F} \pm 10 \mu\text{F}$ connected to the input supply while keeping enable active and shorting the output;</p> <p>Replace the 6th dashed paragraph with the following: -10 000 cycles of turning the input pin on and off with an ferrite-core inductor having $350 \text{ mH} \pm 10 \text{ mH}$ inductance at 1 kHz and less than 1Ω d.c. resistance connected to the input supply and return while keeping enable active and shorting the output;</p> <p>Replace the 10th dashed paragraph with the following: -3 cycles of exposing the device (not energized) to $70 \text{ }^\circ\text{C} \pm 2 \text{ }^\circ\text{C}$ for 24 h; followed by at least 1 h at room ambient; followed by at least 3 h at $-30 \text{ }^\circ\text{C} \pm 2 \text{ }^\circ\text{C}$; followed by 3 h at room ambient;</p> <p>Replace the 11th dashed paragraph with the following: -10 cycles of exposing the device (while energized) to $50 \text{ }^\circ\text{C} \pm 2 \text{ }^\circ\text{C}$ for 10 min; followed by 10 min at $0 \text{ }^\circ\text{C} \pm 2 \text{ }^\circ\text{C}$ with a 5 min period of transition from one state to the other;</p>		N/A
Annex EE	Replace Annex EE with the following Annex JA.		N/A

Clause	Requirement + Test	Result - Remark	Verdict
	<p style="text-align: center;">Annex JA (normative) Document shredding machines</p> <p>HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall additionally comply with the requirements of this annex.</p> <p>JA.1 Markings and instructions</p> <p>The symbol  (JIS S 0101:2000, 6.2.1) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible;</p> <ul style="list-style-type: none"> - that use by an infants/children may cause a hazard of injury etc.; - that a hand can be drawn into the mechanical section for shredding when touching the document-slot; - that clothing can be drawn into the mechanical section for shredding when touching the document-slot; - that hairs can be drawn into the mechanical section for shredding when touching the document-slot; - in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas. <p>JA.2 Inadvertent reactivation</p> <p>Any safety interlock that can be operated by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard.</p> <p>Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1.</p> <p>JA.3 Disconnection from the mains supply</p> <p>Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used.</p> <p>If two-position switch, the positions for "ON" and "OFF" shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for "OFF" shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols.</p> <p>Compliance is checked by inspection.</p> <p>JA.4 Protection against hazardous moving parts</p> <p>Any warning shall not be used instead of the structure for preventing access to hazardous moving parts.</p> <p>Document shredding machines shall comply with the following requirements.</p>		

Clause	Requirement + Test	Result - Remark	Verdict
	<p>Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended. Before testing with the test finger, remove the parts detachable without a tool.</p> <p>Insert the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.</p>  <p style="text-align: center;">Figure JA.1 Test finger</p>		<p>N/A</p>

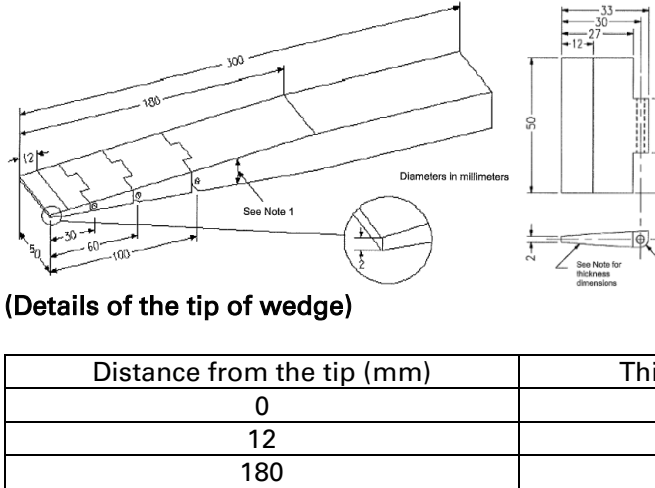


Clause	Requirement + Test	Result - Remark	Verdict								
	 <p>(Details of the tip of wedge)</p> <table border="1" data-bbox="363 683 882 817"> <thead> <tr> <th>Distance from the tip (mm)</th> <th>Thickness of probe (mm)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2</td> </tr> <tr> <td>12</td> <td>4</td> </tr> <tr> <td>180</td> <td>24</td> </tr> </tbody> </table> <p>Note 1 - The thickness of the probe varies linearly, with slope changes at the respective points shown in the table. Note 2 - The allowable dimensional tolerance of the probe is; for ≤ 25 mm: ± 0.13 mm for > 25 mm: ± 0.3 mm.</p>	Distance from the tip (mm)	Thickness of probe (mm)	0	2	12	4	180	24		
Distance from the tip (mm)	Thickness of probe (mm)										
0	2										
12	4										
180	24										

Figure JA.2 Wedge-probe



APPENDIX No.4	National differences for China	IEC 60950-1, 2nd edition	—
1.1.2	<p>GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates.</p> <p>Amend the third dashed paragraph of 1.1.2 as: — — equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;</p>	Altitude: <5000 m	N/A
1.4.5	<p>After the third paragraph, add a 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. The first dash paragraph "-the RATED VOLTAGE is 230V single-phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011</p>		P
1.4.12.1	<p>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.</p> <p>Add 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.</p> <p>Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.</p>		P
1.5. 2	<p>Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.</p>		N/A
1.7	<p>Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.</p>	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A

Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	<p>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.</p> <p>And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.</p>		P
1.7.2.1	<p>Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions:</p> <p>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.</p> <p>"Only used at altitude not exceeding 2000m."</p>  <p>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.</p> <p>"Only used in not-tropical climate regions."</p>  <p>If only the symbol used, the explanation of the symbol shall be contained in the instruction manual.</p> <p>The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.</p>	<p>Altitude: <5000 m. The marking label shall be checked for proper certificate of these countries' certification before products are sold in the market.</p>	N/A

Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	<p>Amended the first paragraph 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.</p> <p>Delete note of Clause 2.7.1.</p>		P
2.9.2	<p>First section of Clause 2.9.2 amended as two sections:</p> <p>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 °C and a relative humidity of (93 ± 3) %. During this conditioning the component or subassembly is not energized.</p> <p>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 between 20 °C and 30 °C such that condensation does not occur.</p> <p>Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered.</p> <p>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.</p>		P

Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.1	Amend 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 IEC 60664-1. 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.	Altitude: <5000 m.	N/A
2.10.3.3& 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K、 2L and 2M.		N/A
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/T16935.1 (IEC 60664-1) . 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/T16935.1.	Altitude: <5000 m.	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.		N/A

Clause	Requirement + Test	Result - Remark	Verdict
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.		P
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.		P
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.		N/A

Clause	Requirement + Test	Result - Remark	Verdict
Annex DD (normative)	<p>Added annex DD: Instructions for the new safety warning labels.</p> <p>DD.1 Altitude warning label</p>  <p>Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefore it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m.</p> <p>DD.2 Climate warning label</p>  <p>Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.</p>	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
Annex EE (informative)	<p>Added annex EE:</p> <p>Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighu.</p>	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
Other amendments	<p>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.</p>		P

Clause	Requirement + Test	Result - Remark	Verdict
<p>Quoting standards and reference documents</p>	<p>The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows:</p> <p>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.</p> <p>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:</p> <ul style="list-style-type: none"> - 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. <p>When quoting several chapters or clauses of the international standard, the principles of quotation are as follows:</p> <ul style="list-style-type: none"> - 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. 		<p>P</p>
	<p>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 and GB 4943.1-2011.</p>		<p>P</p>

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
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	National Differences		
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	Added.	P
1.5	COMPONENTS		P
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'	Added.	P
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	Added.	P
1.7	MARKINGS AND INSTRUCTIONS		P
1.7.1.3	<i>Delete</i> existing text and <i>replace</i> 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	Replaced.	P
2.9	ELECTRICAL INSULATION		N/A
2.9.2	Variation Second paragraph, <i>delete</i> the word 'designated'	Deleted.	N/A
3.2.5	POWER SUPPLY CORDS		N/A

Clause	Requirement + Test	Result - Remark	Verdict												
Table 3B	<p>Variation</p> <p>1. <i>Delete</i> the first four rows and replace with the following:</p> <table border="1"> <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>	Over 0.2 up to and including 3	0.5 ^a	18 [0.8]	Over 3 up to and including 7.5	0.75	16 [1.3]	Over 7.5 up to including 10	(0.75) ^b 1.00	16 [1.3]	Over 10 up to including 16	(1.0) ^c 1.5	14 [2]	Direct plug-in type	N/A
Over 0.2 up to and including 3	0.5 ^a	18 [0.8]													
Over 3 up to and including 7.5	0.75	16 [1.3]													
Over 7.5 up to including 10	(0.75) ^b 1.00	16 [1.3]													
Over 10 up to including 16	(1.0) ^c 1.5	14 [2]													
	2. <i>Delete</i> NOTE 1 and renumber existing NOTE 2 as 'NOTE'		N/A												
	<p>3. <i>Delete</i> Footnote ^a and replace with the following:</p> <p>^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)</p>		N/A												
4.3	DESIGN AND CONSTRUCTION		P												
4.3.6	<p>Variation</p> <p><i>Delete</i> the third paragraph and <i>replace</i> with the following:</p>		P												
	<i>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</i>	Evaluated during national approval	P												
4.3.8	<p>Addition</p> <p>Eighth paragraph, <i>insert</i> the following new note after the first dash item:</p>		N/A												
	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.	No battery.	N/A												
4.3.13.5.1	<p>Variation</p> <p><i>Delete</i> the first paragraph and <i>replace</i> with the following:</p> <p>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</p>	No lasers.	N/A												

Clause	Requirement + Test	Result - Remark	Verdict
	Third paragraph, first sentence, after 'IEC 60825-1', <i>insert</i> the following text: or AS/NZS 60825.1		N/A
	Fourth paragraph, after 'IEC 60825-1', <i>insert</i> the following text: or AS/NZS 60825.1		N/A
4.7	RESISTANCE TO FIRE		P
4.7	Addition At the end of Clause 4.7, <i>insert</i> the following text: For alternate tests refer to Clause 4.7.201		P
6	CONNECTION TO TELECOMMUNICATIONS NETWORKS		N/A
6.2.2	Variation For Australia only, <i>delete</i> the first paragraph and Note, and <i>replace</i> 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, <i>delete</i> the first paragraph including the Notes, and <i>replace</i> 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, U_c , 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

Clause	Requirement + Test	Result - Remark	Verdict
7.3	Addition <i>Add</i> 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 <i>Add</i> the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification— Plugs and socket-outlets		P
	<i>Special national conditions (if any)</i>		P
1.2.12	FLAMMABILITY		P
1.2.12.15	Addition After Clause 1.2.12.15, <i>insert</i> the following new clause:		P
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		P
	Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS		P
	NOTE 1 An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE		P
	NOTE 2 This definition is from AS/NZS 60065:2012, Clause 2.8.11.		P
4	PHYSICAL REQUIREMENTS		N/A
4.1	Addition After Clause 4.1, <i>insert</i> 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

Clause	Requirement + Test	Result - Remark	Verdict
4.3.8	Addition After Clause 4.3.8, <i>add</i> 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, <i>add</i> 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.	The alternative method is not considered.	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 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		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
	<i>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</i>		N/A
	<i>For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5</i>		N/A

Clause	Requirement + Test	Result - Remark	Verdict
	<p>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.</p> <p>These tests are not carried out on internal wiring</p>		N/A
4.7.201.2	<p>Testing of non-metallic materials</p> <p>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</p> <p>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.</p>	The alternative method is not considered.	N/A
4.7.201.3	<p>Testing of insulating materials</p> <p>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.</p> <p>NOTE Contacts in components such as switch contacts are considered to be connections.</p> <p>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.</p> <p>The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</p>	The alternative method is not considered.	N/A

Clause	Requirement + Test		Result - Remark	Verdict
	Clause of AS/NZS 60695.11.5	Change		
	9 Test procedure			
	9.2 Application of Needle-flame	<i>Delete</i> the first and second paragraphs and <i>replace</i> 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	<i>Delete</i> existing text and <i>replace</i> 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	<i>Delete</i> existing text and <i>replace</i> 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

Clause	Requirement + Test	Result - Remark	Verdict
4.7.201.4	<p>Testing in the event of non-extinguishing material</p> <p>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.</p>	The alternative method is not considered.	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	<p>Testing of printed boards</p> <p>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.</p>	The alternative method is not considered.	N/A

Clause	Requirement + Test	Result - Remark	Verdict
	<p>The test is not carried out if the</p> <ul style="list-style-type: none"> – 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 <p><i>Compliance shall be determined using the smallest thickness of the material.</i></p>		N/A
	<p>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.</p>		N/A

APPENDIX No.6	National differences for Korea IEC 60950-1, 2nd edition; Am 1:2009		—
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	To be evaluated when submitted for the national approval.	—
8	EMC The apparatus shall comply with the relevant CISPR standards.	To be evaluated when submitted for the national approval.	—

APPENDIX NO.7		National differences for United Kingdom		—
IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013				
Clause	Requirement + Test	Result - Remark	Verdict	
2.6.3.3	In the United Kingdom, the current rating of the circuit shall be taken as 13 A, not 16 A.	No protective bonding conductors	N/A	
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.		P	
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.	BS1363 type integral plug	P	
3.2.5.1	In the United Kingdom, a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Direct plug-in type, no supply cord	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.	Direct plug-in type, no supply cord	N/A	

Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	<p>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.</p> <p>UK Application Note: BS 1363-1:1995+A4:2012 has now superseded the previous version (incorporating Amendments 1:1997, 2:2003 and 3:2007) which has been withdrawn. Our recommendation is for users to always identify and follow the latest version of a standard to which a dated reference is made. This is also applicable in the case of BS EN 60950-1 and users would need to refer to the latest version of BS 1363-1:1995+A4:2012 when applying BS EN 60950-1.</p>	Should be evaluated during national approval.	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
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USA - Differences to IEC 60950-1:2005, Second Edition			P
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70		P
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.		P
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Equipment intended for outdoor use		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.		P
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of UL component standards in Annex P.1.		P
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of UL component standards		P
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.		N/A
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.		N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC		N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable		N/A
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863		N/A

Clause	Requirement + Test	Result - Remark	Verdict
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system subjected to special circuit classification requirements (e.g., TNV-2)		N/A
1.6.1.2	Earthing of d.c. powered equipment provided		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area		N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor		N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions		P
1.7.6	Fuse replacement marking for operator accessible fuses		N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor		N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring		N/A
2.1.1.1	Bare TNV conductive parts protected by a cover are exempt if instructions include directions for disconnection of TNV prior to removal of the cover		N/A
2.3.1.b	Other telecommunication signaling systems than described in 2.3.1(b) are subject to M.4.		N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the max. current limit through a resistor ≥ 2000 Ohm with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions		N/A
2.3.1.b	Limits for measurements across 5000 Ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.		N/A
2.3.2.1	For a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A
2.3.2.4	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications if subject to special construction requirements and testing		N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting according to the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable		N/A

Clause	Requirement + Test	Result - Remark	Verdict
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.		N/A
2.6.3.3	For Pluggable Equipment Type A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A		N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US		N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A
2.10.5.12	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.12 and Annex U.	Approved TIW used.	P
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent & short circuit protection		N/A
3.1.1	All interconnecting cables protected against overcurrent and short circuit.		N/A
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC		P
3.2.1	Permitted use for flexible cords and plugs.		N/A
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements		N/A

Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.		N/A
3.2.1.2	Markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to the equipment earthing conductor		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the equipment earthing conductor		N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.		N/A
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC		N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm ²) and not less than 150 mm in length for connection of field installed wiring.		N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Length of power supply cord limited to between 1.5 and 4.5 m unless shorter length used when intended for a special installation.		N/A
3.2.5	Conductors in power supply cords sized per NEC		N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.		N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A

Clause	Requirement + Test	Result - Remark	Verdict
3.2.9	Equipment solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system when wiring is protected from abuse.		N/A
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.		N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than specified in 3.3 if wiring is reliably separated		N/A
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means		N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm ²) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept US wire sizes (gauge)		N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor for the terminals used		N/A
3.3.6	Aluminum conductors not permitted for connection to terminal for equipment earthing conductor		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".		N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 minutes provided with battery disconnect means		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A
4.2.11	For equipment mounted on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails		N/A

Clause	Requirement + Test	Result - Remark	Verdict
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310		P
4.3.12	The max. quantity of flammable liquid stored in equipment per ANSI/NFPA 30 (Table NAE.6)		N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.		N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation		N/A
4.3.13.5	Requirements contained in the applicable national codes apply to lasers (21 CFR 1040).		N/A
4.7	Automated information storage equipment intended to contain more than 0.76 m ³ of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics (according to UL 2043). Equipment for installation in space used for environmental air, described in Sec. 300-22(c) of the NEC, provided with instructions indicating suitability for installation		N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.93 m ² or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.		P
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.		N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.7	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.		P
5.3.7	Tests interrupted by opening of a component repeated two additional times.		P
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A
6	Specialized instructions for telephones that may be connected to a telecommunications network		N/A

Clause	Requirement + Test	Result - Remark	Verdict
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.		N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		N/A
6.4	Additional requirements for equipment connected to a telecommunication network using cable subject to overvoltage from power line failures		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.		N/A
H	Ionizing radiation measurements made under single fault conditions according to 21 CFR 1020		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A
M.4	Special requirements for message waiting and similar telecommunications signals.		N/A
NAC	Equipment for use with a generic secondary protector marked with suitable instructions.		N/A
NAC	Equipment marked with suitable instructions if for use with a specific primary or secondary protector		N/A
NAD	Acoustic pressure from an ear piece for short and long duration disturbances		N/A
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
NAF	Household/Home Office Document Shredders		N/A
NAF.1.7	Markings and instructions alert the user to key safety considerations related to use of shredders, including not intended to be used by children, avoid touching document feed opening, avoid clothes and hair entanglement, and avoid aerosol products.		N/A
NAF.2.8.3	Safety interlock cannot be inadvertently activated by the articulated accessibility probe		N/A

Clause	Requirement + Test	Result - Remark	Verdict
NAF.3.4	Provided with an isolating switch complying with 3.4.2, including 3 mm contact gap, with appropriate markings associated with the switch.		N/A
NAF.4.4	Hazardous moving parts are not accessible, as determined using the articulated accessibility probe and the accessibility probe/wedge		N/A

Appendix No.9: Photos of product

External view



External view



External view



External view



External view



External view



Internal view



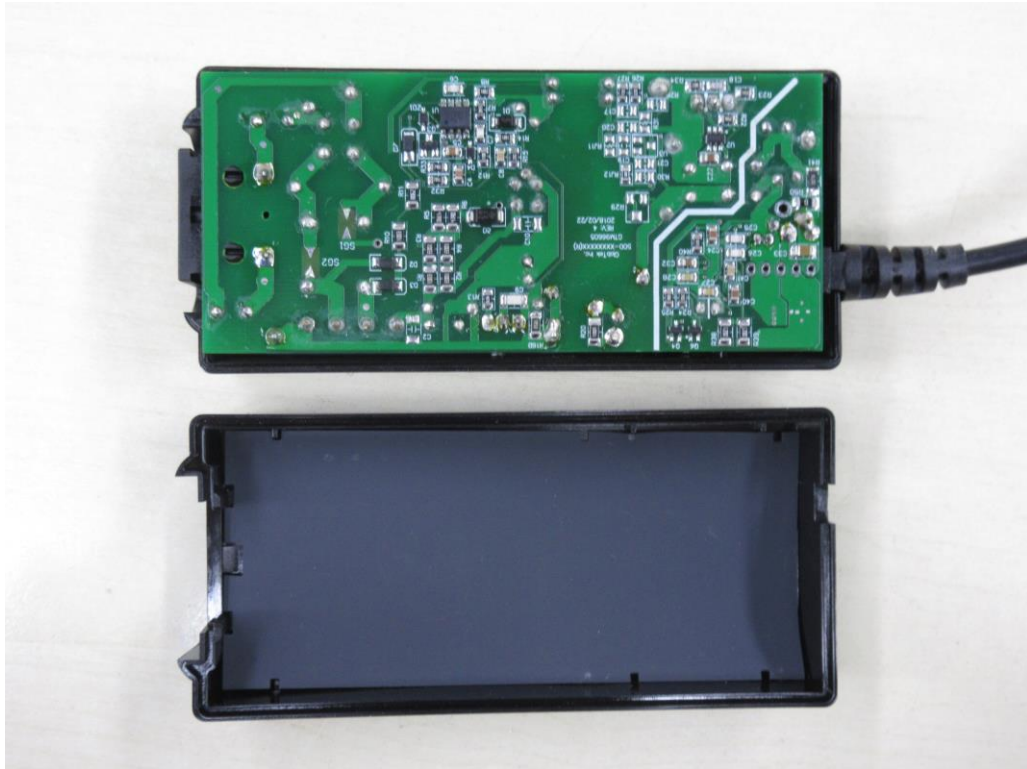
Internal view



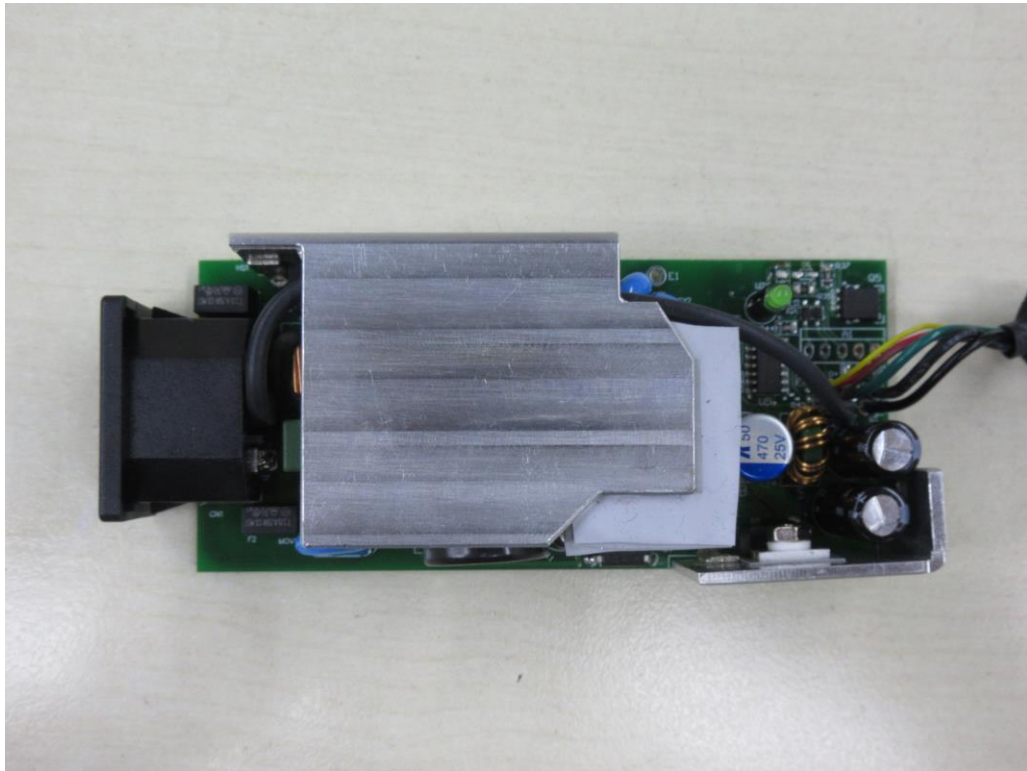
Internal view



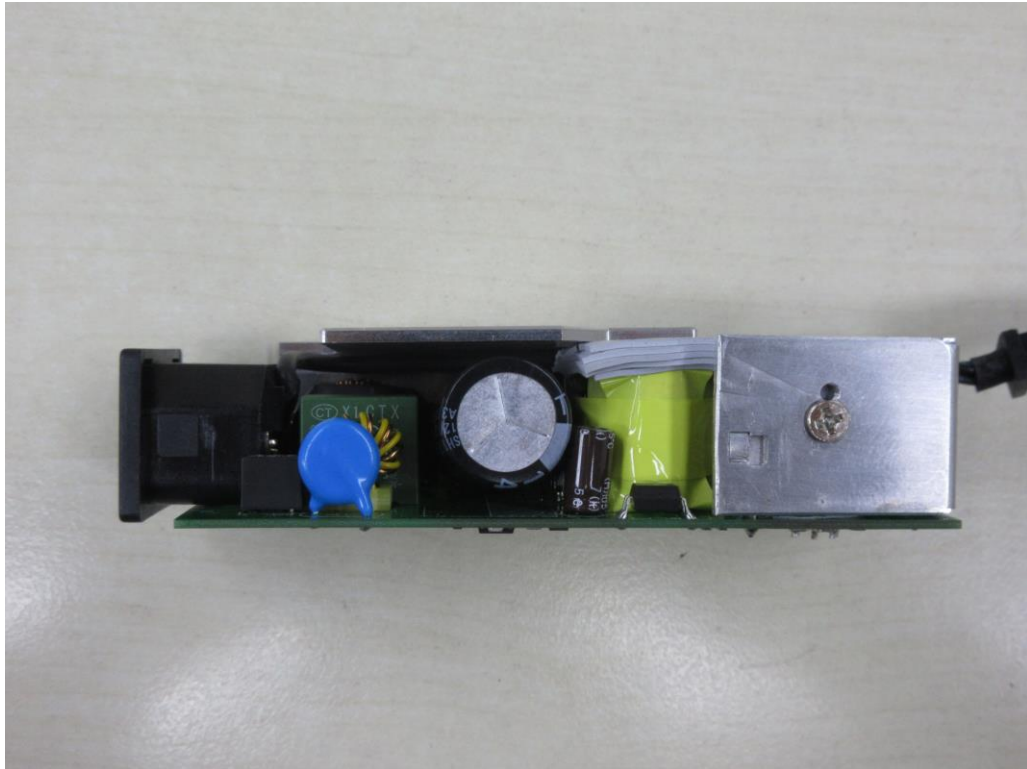
Internal view



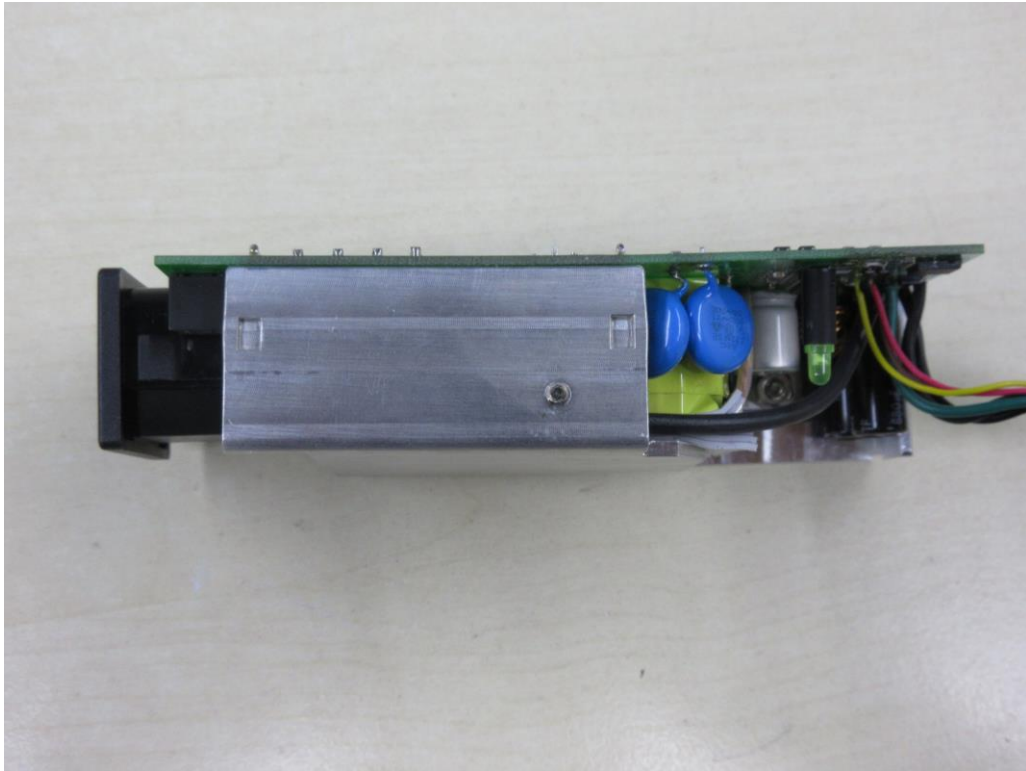
PCB view



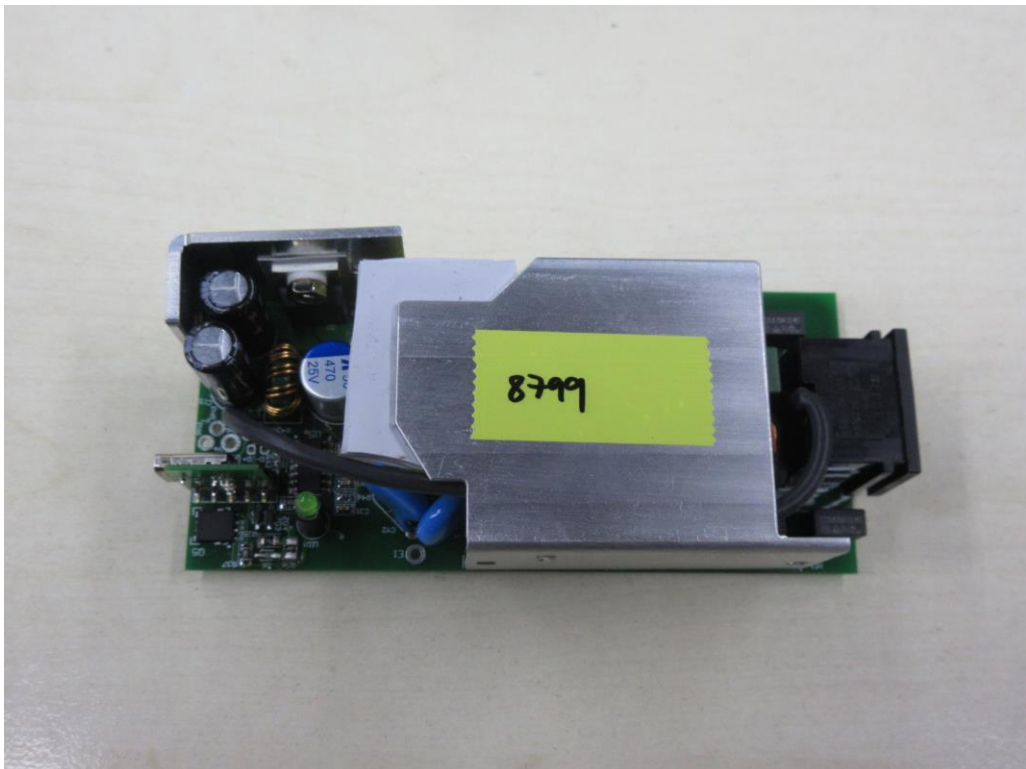
PCB view



PCB view



PCB view



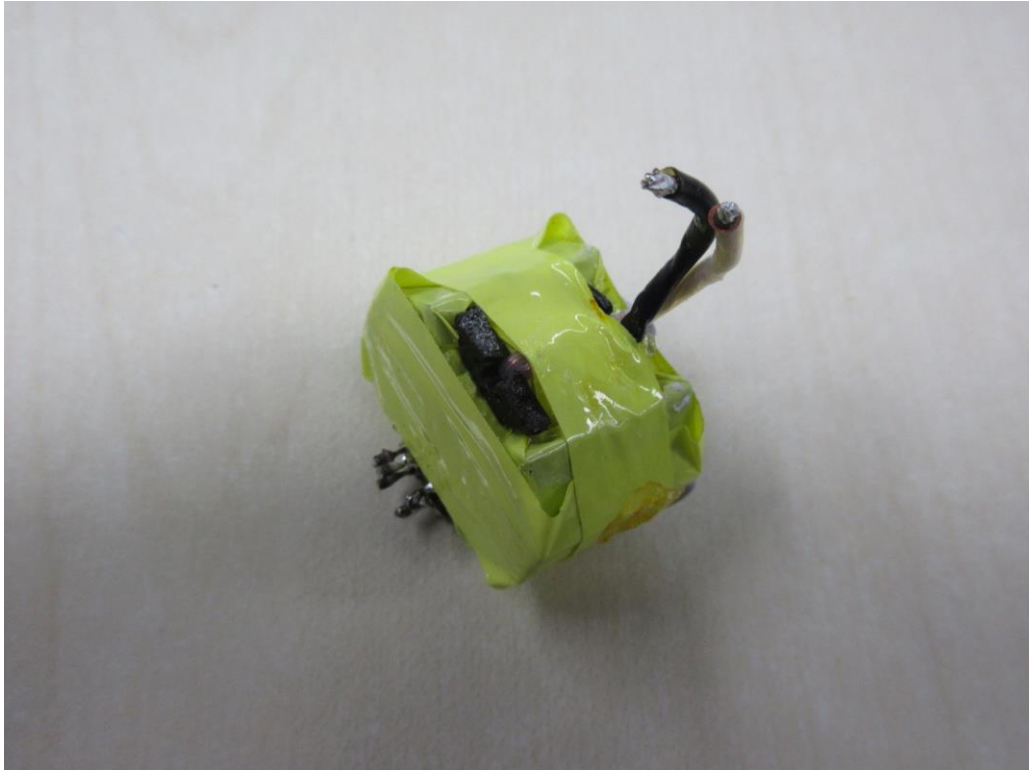
PCB view



Transformer view



Transformer view



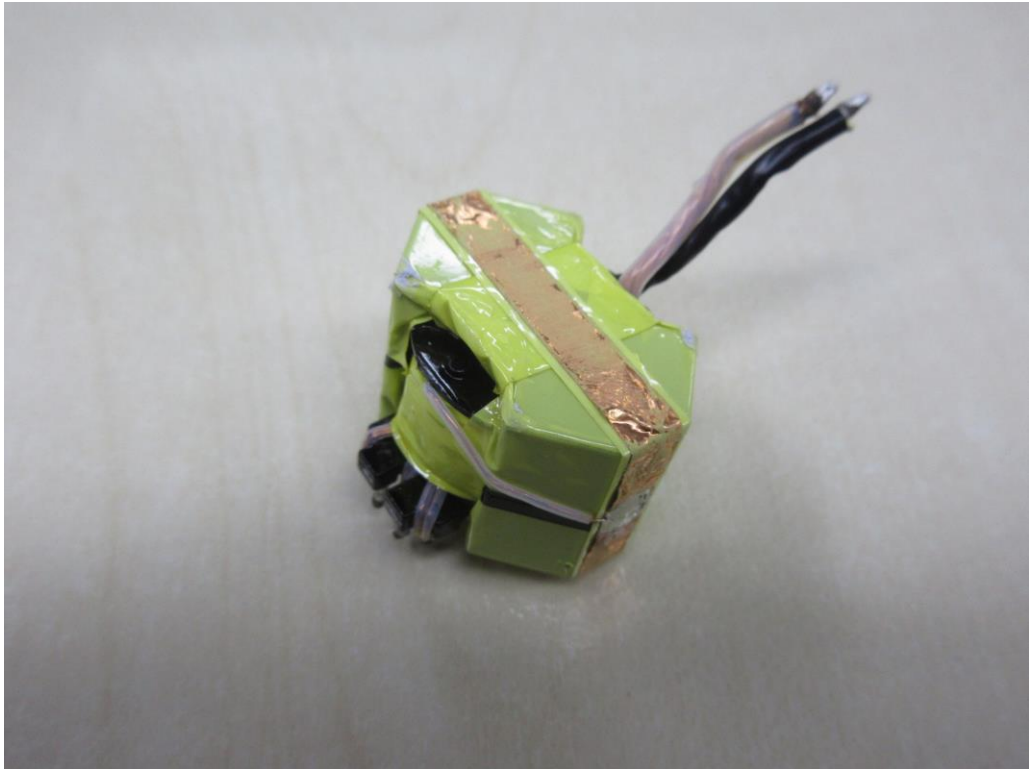
Transformer view



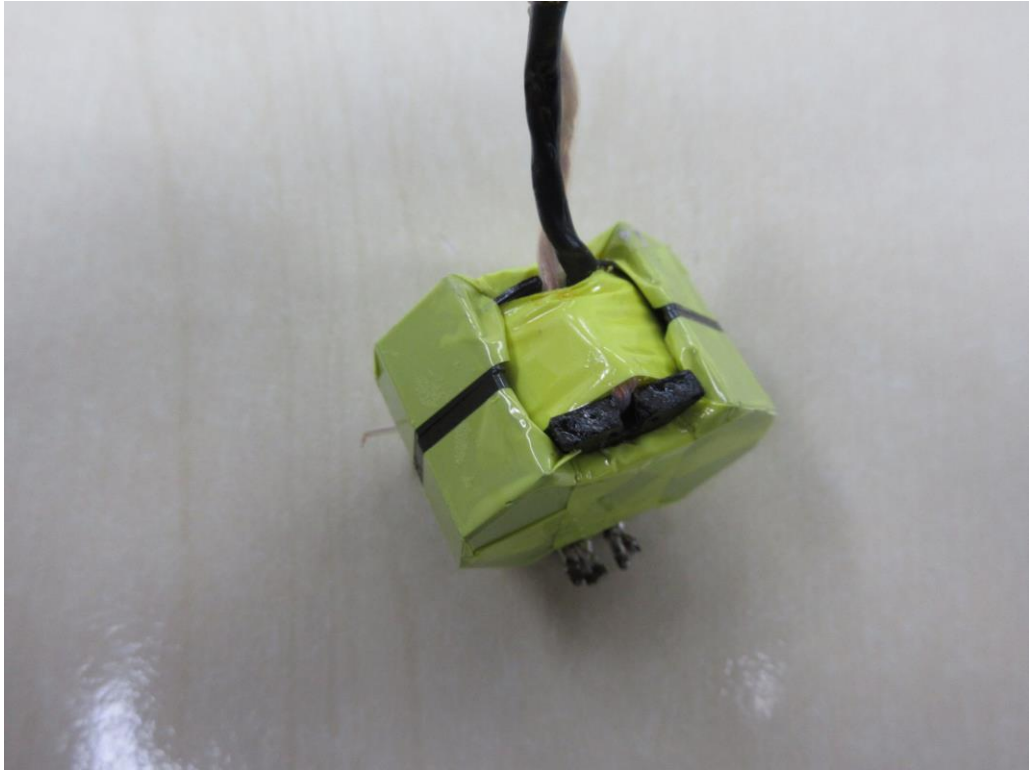
Transformer view



Transformer view



Transformer view



Transformer view



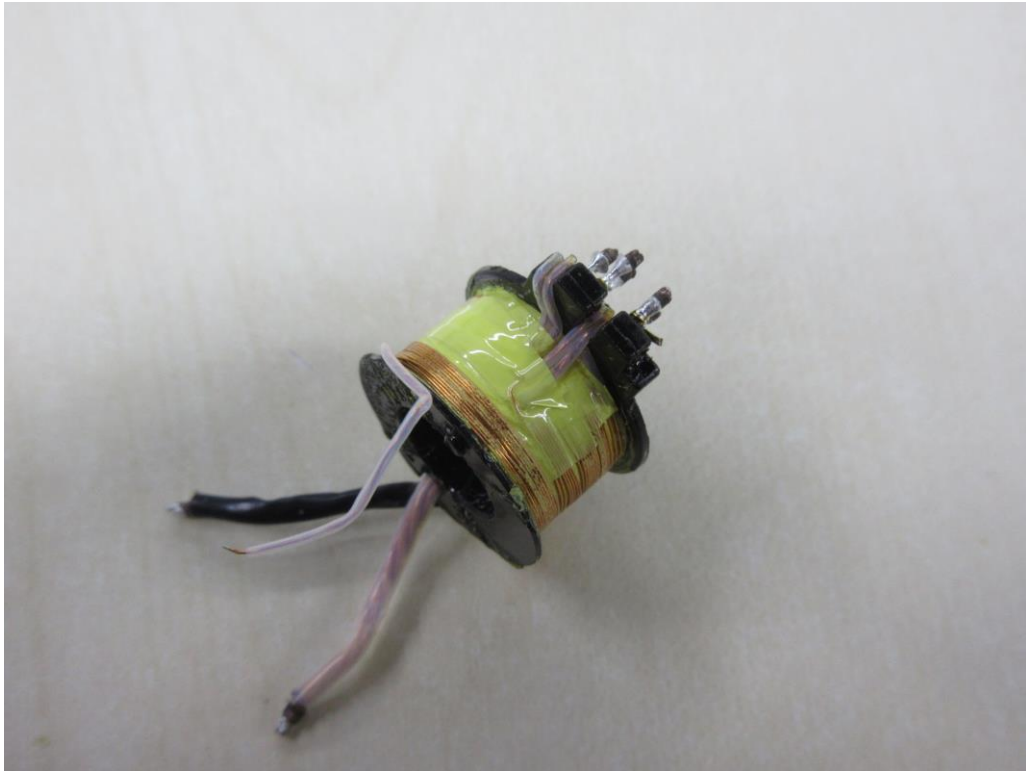
Transformer view



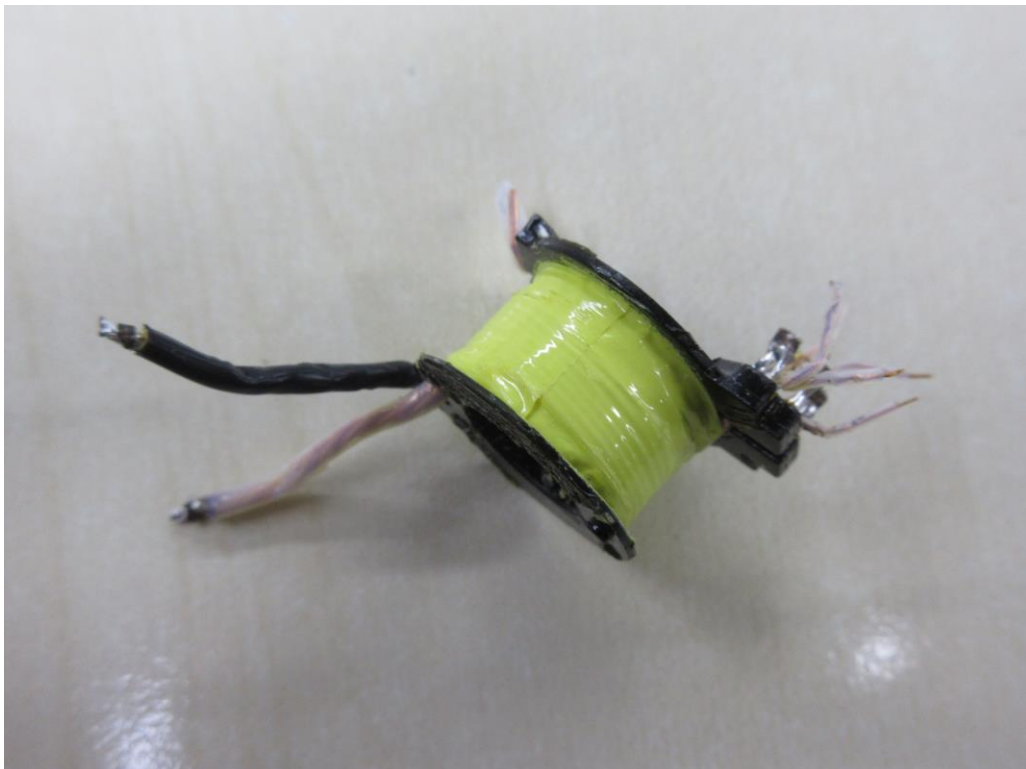
Transformer view



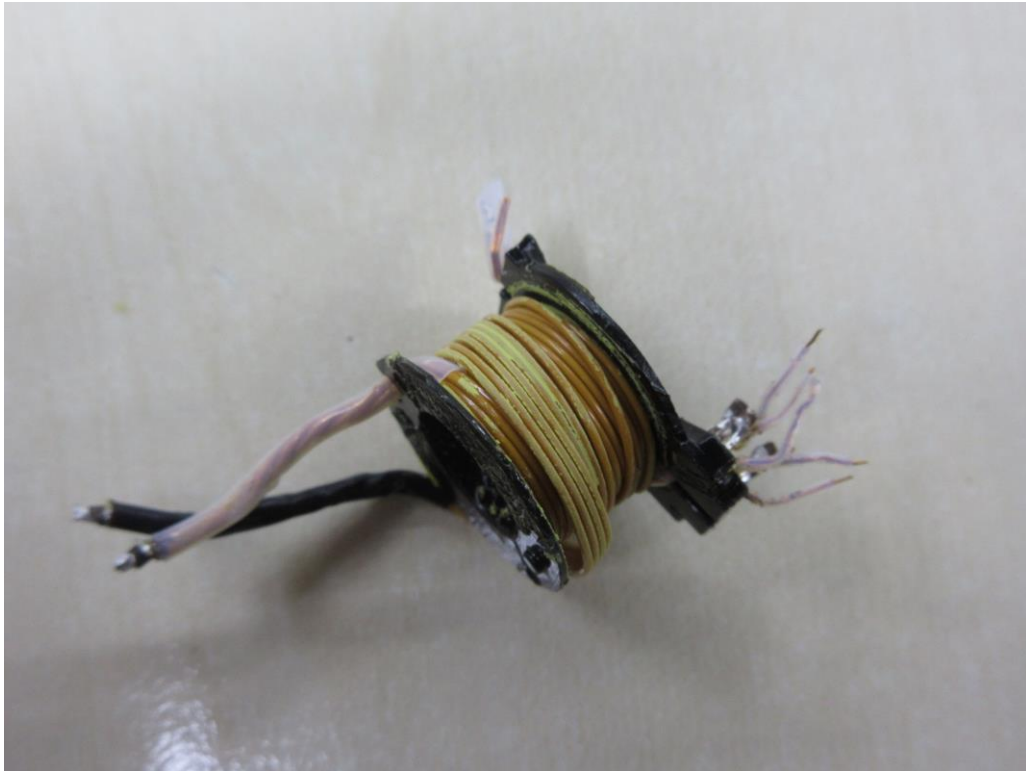
Transformer view



Transformer view



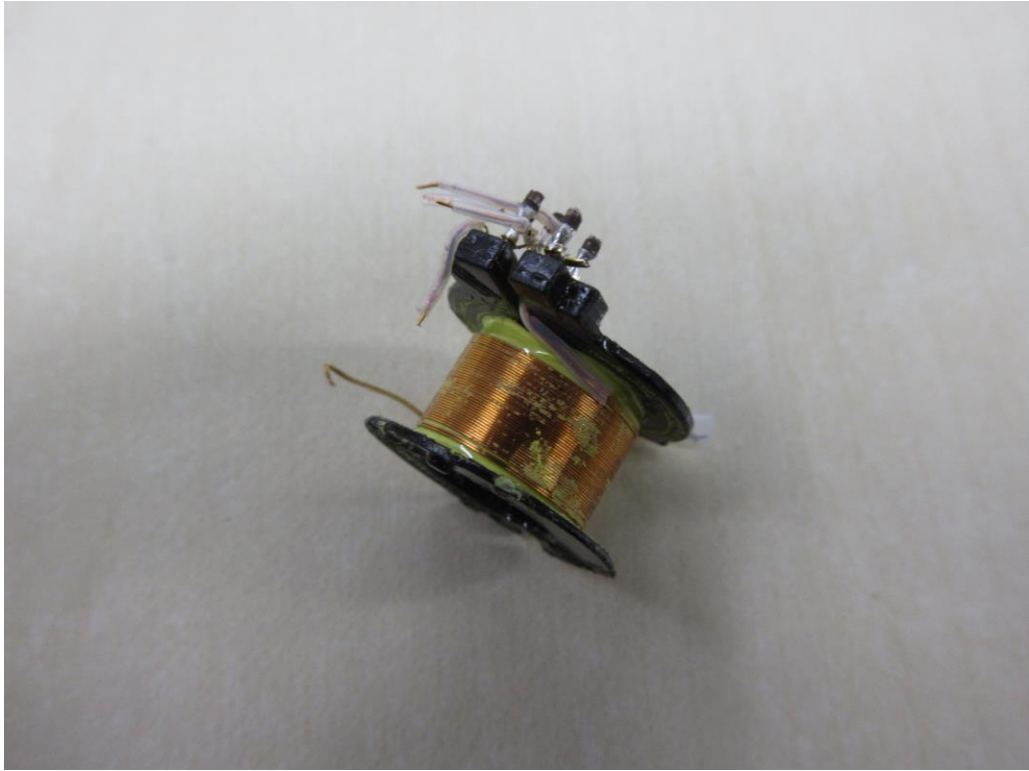
Transformer view



Transformer view



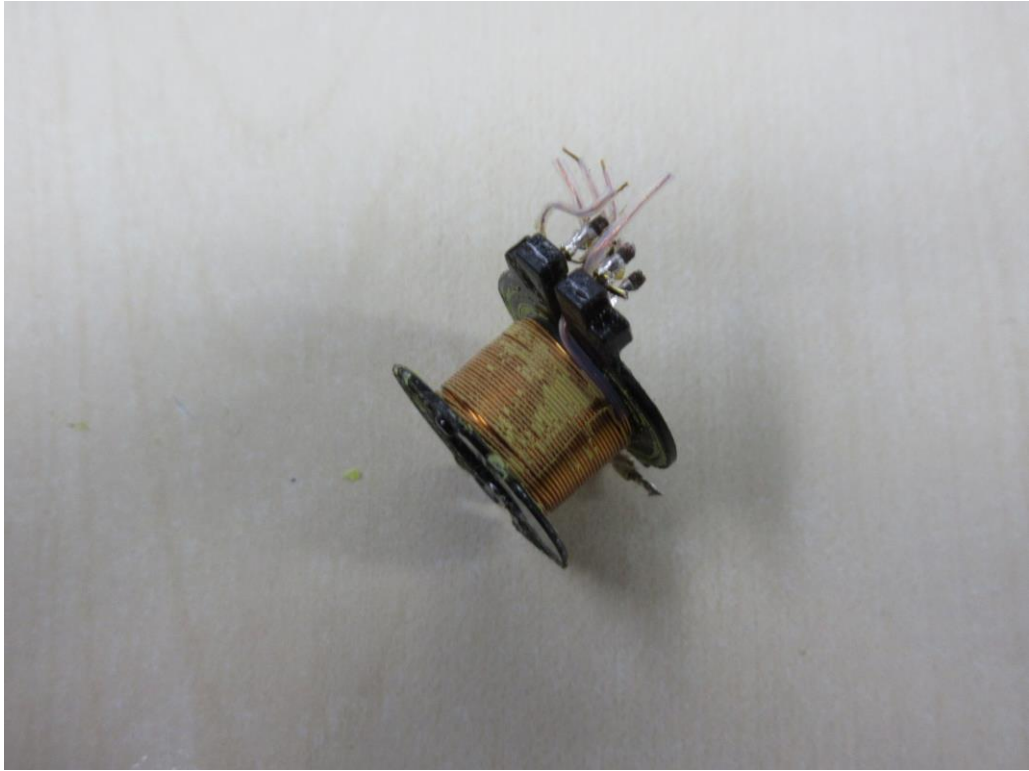
Transformer view



Transformer view



Transformer view



Transformer view

