



IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	MONITOR
Name and address of the applicant	AHA INC CO., LTD. 67, Hwanggeum-ro 109 beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, 415-843 Korea, Republic of
Name and address of the manufacturer	AHA INC CO., LTD. 67, Hwanggeum-ro 109 beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, 415-843 Korea, Republic of
Name and address of the factory	<input type="checkbox"/> Additional information on page 2 AHA INC CO., LTD. 67, Hwanggeum-ro 109 beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, 415-843 Korea, Republic of
Note: When more than one factory, please report on page 2	
Ratings and principal characteristics	100-240 V~, 50/60 Hz, 2.5-1.0 A for 55 inch panel size 100-240 V~, 50/60 Hz, 1.0-0.5 A for 49 inch panel size
Trademark (if any)	
Customer's Testing Facility (CTF) Stage used	
Model / Type Ref.	AEM-5055UE, AEM-4549UE, ADID-uvwwwxyz, AEM-wwwxyz, AXM-wwwxyz (For differences, please see page 6 of test report)
Additional information (if necessary may also be reported on page 2)	<input type="checkbox"/> Additional information on page 2
A sample of the product was tested and found to be in conformity with	IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013 National differences: EU Group Differences, AU, CA, CN, JP, NZ, US
As shown in the Test Report Ref. No. which forms part of this Certificate	CBC2017-0084

This CB Test Certificate is issued by the National Certification Body

Korea Testing & Research Institute (KTR)
98, Gyoyukwon-ro, Gwacheon-si, Gyeonggi-do, Korea, Republic of



Test Report issued under the responsibility of:
Korea Testing & Research Institute



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

Report Number.....: CBC2017-0084
Date of issue.....: 2018-05-15
Total number of pages Refer to page 3

Applicant’s name: AHA INC CO., LTD.
Address.....: 67, Hwanggeum-ro 109 beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, 415-843, REPUBLIC OF KOREA

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.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.



Test item description	MONITOR
Trade Mark	
Manufacturer	AHA INC CO., LTD. 67, Hwanggeum-ro 109 beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, 415-843, REPUBLIC OF KOREA
Model/Type reference	AEM-5055UE, AEM-4549UE, ADID-uvvwwxyz, AEM-vvwwxyz, AXM-vvwwxyz, Refer to page 6
Ratings	AEM-5055UE, ADID-uvv55xyz, AEM-vv55xyz, AXM-vv55xyz: 100-240 V~, 50/60 Hz, 2.5-1.0 A AEM-4549UE, ADID-uvv49xyz, AEM-vv49xyz, AXM-vv49xyz: 100-240 V~, 50/60 Hz, 1.0-0.5 A (100-240 V~, 50/60 Hz, 2.5-1.0 A for 55 inch panel size, 100-240 V~, 50/60 Hz, 1.0-0.5 A for 49 inch panel size) Refer to page 6

Testing procedure and testing location:

<input checked="" type="checkbox"/>	CB Testing Laboratory:	Korea Testing & Research Institute (KTR)	
Testing location/ address		98, Gyoyukwon-ro, Gwacheon-si, Gyeonggi-do, Korea	
<input type="checkbox"/>	Associated CB Testing Laboratory:	N/A	
Testing location/ address		N/A	
Tested by (name + signature).....		Jae Young Yoo	
Approved by (name + signature)		Hee Young Yang	
<input type="checkbox"/>	Testing procedure: TMP/CTF Stage 1:		
Testing location/ address		N/A	
Tested by (name + signature).....		N/A	
Approved by (name + signature)		N/A	
<input type="checkbox"/>	Testing procedure: WMT/CTF Stage 2:		
Testing location/ address		N/A	
Tested by (name + signature).....		N/A	
Witnessed by (name + signature)		N/A	
Approved by (name + signature)		N/A	
<input type="checkbox"/>	Testing procedure: SMT/CTF Stage 3 or 4:		
Testing location/ address		N/A	
Tested by (name + signature).....		N/A	
Witnessed by (name + signature)		N/A	
Approved by (name + signature)		N/A	
Supervised by (name + signature).....		N/A	



List of Attachments (including a total number of pages in each attachment):

- 1) Main page: 46 pages
- 2) Attachment 1: 19 pages (European group differences and national differences
EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013)
- 3) Attachment 2: 40 pages (National differences)
- 4) Attachment 3: 8 pages (Photograph)

Summary of testing:**Tests performed (name of test and test clause):**

All clauses

Testing location:

Korea Testing & Research Institute (KTR)
98, Gyoyukwon-ro, Gwacheon-si, Gyeonggi-do,
Korea

Summary of compliance with National Differences:**List of countries addressed**

List of countries addressed: Australia/New Zealand, Canada, Japan, USA, China and European group differences and national differences.

- The product fulfils the requirements of the standard IEC 60950-1:2005+A1:2009+A2:2013 and EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013.



Copy of marking plate:

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

These is a representative label, the others are identical to it except for the model number.

LED INTERACTIVE

Product Name : MONITOR
 Model Name : AEM-5055UE
 Power Supply : 100-240 V~, 50/60 Hz
 Rated Current : 2.5-1.0 A





CAUTION (ATTENTION)
 RISK OF ELECTRIC SHOCK
 DO NOT OPEN
 RISQUE DE CHOC ÉLECTRIQUE
 NE PAS OUVRIR

- Only used at altitude not exceeding 2000 m.
 - Only used in non-tropical climate regions.







160701

AHA INC CO.,LTD.
 67, Hwanggeum-ro 109beon-gil, Yangchon-eup,
 Gimpo-si, Gyeonggi-do 415-843, Korea
www.ahatouch.com Made in Korea

LED INTERACTIVE


Product Name : MONITOR
 Model Name : AEM-4549UE
 Power Supply : 100-240 V~, 50/60 Hz
 Rated Current : 1.0-0.5 A





CAUTION (ATTENTION)
 RISK OF ELECTRIC SHOCK
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160701

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Note : The above marking plate is representative of them and the other models are similar except for model type designation.



Test item particulars	
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> wall mounted
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 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)	16 A Canada and the United States: 20 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)	Up to 2 000 m
Altitude of test laboratory (m)	70 m
Mass of equipment (kg)	Approx.: 32.0 kg (AEM-5055UE) Approx.: 26.0 kg (AEM-4549UE)

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.....: 2017-06-21

Date (s) of performance of tests: 2017-06-21 to 2018-05-15

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
 "(See appended table)" refers to a table appended to the report.

Throughout this report a comma / point is used as the decimal separator.



Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60950-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :

- Yes
 Not applicable

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

Name and address of factory (ies) : AHA INC CO., LTD.
 67, Hwanggeum-ro 109 beon-gil, Yangchon-eup,
 Gimpo-si, Gyeonggi-do, 415-843, REPUBLIC OF
 KOREA

General product information:

- 1) The equipment under test is a Class I
- 2) The maximum ambient temperature permitted by the manufacturer (T_{ma}): 40 °C
- 3) The tolerance -10 % and +10 % is declared by manufacturer.
- 4) Some components are pre-certified, which have been evaluated according to the relevant requirements of IEC 60950-1, are employed in this product. Their suitability of use has been checked according to subclauses 1.5.1 and 1.5.2.
- 5) The model AEM-5055UE and AEM-4549UE were conducted tests representatively.
- 6) Overall size of the equipment without stand (mm): AEM-5055UE – 1 210 (W) x 680 (H) x 110 (D)
- 6) Overall size of the equipment without stand (mm): AEM-4549UE – 1 070 (W) x 610 (H) x 110 (D)

Model Difference:

Models : ADID-u¹vv²ww³x⁴y⁵z⁶, AEM-vv²ww³x⁴y⁵z⁶, AXM-vv²ww³x⁴y⁵z⁶
 ADID, AXM models are identical to AEM model except for only bezel type.

- 1) "u" may be G, or C, S, blank, it may be changed according to customer type.
- 2) "vv" may be 45 or 50, it may be changed according to panel candela.
- 3) "ww" may be 49 or 55, it may be changed according to panel size.
- 4) "x" may be U or S, X, it may be changed according to bezel size.
- 5) "y" may be E, M, P, it may be changed according to direction of install optional.
- 6) "z" may be 2 or 3, 4, 5, blank, it may be changed according to product quantity.



Abbreviations used in the report:

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

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard.</p> <p>Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p>	P
1.5.3	Thermal controls	No thermal controls	N/A
1.5.4	Transformers	Evaluated during separate certification of power supply.	N/A
1.5.5	Interconnecting cables	The interconnecting cables contain only SELV.	P
1.5.6	Capacitors bridging insulation	Evaluated during separate certification of power supply.	N/A
1.5.7	Resistors bridging insulation	No bridging resistors	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Evaluated during separate certification of power supply.	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	Evaluated during separate certification of power supply.	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Intended for TN power system	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	No hand-held equipment	N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation throughout the equipment	P
1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	See below	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:	No multiple mains	N/A
	Rated voltage(s) or voltage range(s) (V)	100-240 V~	P
	Symbol for nature of supply, for d.c. only	The equipment is for a.c. supply.	N/A
	Rated frequency or rated frequency range (Hz)	50/60 Hz	P
	Rated current (mA or A)	AEM-5055UE, ADID-uvv55xyz, AEM-vv55xyz, AXM-vv55xyz: 2.5-1.0 A AEM-4549UE, ADID-uvv49xyz, AEM-vv49xyz, AXM-vv49xyz: 1.0-0.5 A	P
1.7.1.2	Identification markings	See below	P
	Manufacturer's name or trade-mark or identification mark	AHA INC CO., LTD.	P
	Model identification or type reference	(see copy of marking plates)	P
	Symbol for Class II equipment only	Class I equipment	N/A
	Other markings and symbols	Other markings and symbols do not give rise to misunderstanding.	P
1.7.1.3	Use of graphical symbols	(see copy of marking plates)	P
1.7.2	Safety instructions and marking	See below	P
1.7.2.1	General	User instruction is provided	P
1.7.2.2	Disconnect devices	Appliance inlet used.	N/A
1.7.2.3	Overcurrent protective device	Pluggable equipment type A	N/A
1.7.2.4	IT power distribution systems	Not intended for IT power systems	N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment	No voltage adjustment	N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment	No power outlets	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Evaluated during separate certification of power supply.	N/A
1.7.7	Wiring terminals	See below	P
1.7.7.1	Protective earthing and bonding terminals	Terminal for connection of protective bonding conductor is marked with standard earth symbol (IEC 60417-5019) near the terminal.	P
1.7.7.2	Terminals for a.c. mains supply conductors	Appliance inlet used.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	No d.c. mains supply	N/A
1.7.8	Controls and indicators	See below	P
1.7.8.1	Identification, location and marking.....	The function of controls affecting safety is obvious without knowledge of language etc.	P
1.7.8.2	Colours	Only functional user colour.	P
1.7.8.3	Symbols according to IEC 60417.....	The mains switch is not relied upon as a disconnect device (appliance inlet used) however it is marked with the symbols: "O" and "I" (IEC 60417-1 No. 5008 and 5007).	P
1.7.8.4	Markings using figures	No figures used	N/A
1.7.9	Isolation of multiple power sources	No multiple power sources.	N/A
1.7.10	Thermostats and other regulating devices	No thermostats or other regulating devices	N/A
1.7.11	Durability	The marking withstand the required test.	P
1.7.12	Removable parts	No removable parts.	N/A
1.7.13	Replaceable batteries	No lithium battery in the equipment.	N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations.....	Equipment not intended for installation in 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	See below	P



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.1	Access to energized parts	No access to energized parts.	P
	Test by inspection	No hazard	P
	Test with test finger (Figure 2A)	No hazard	P
	Test with test pin (Figure 2B)	No hazard	P
	Test with test probe (Figure 2C)	No TNV circuits	N/A
2.1.1.2	Battery compartments	No TNV circuits	N/A
2.1.1.3	Access to ELV wiring	No 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	All accessible parts are separated from internal wiring at hazardous voltage by double or reinforced insulation, complying with 3.1.4.	P
2.1.1.5	Energy hazards	No energy hazard in operator access area.	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment	No risk of electric shock	P
	Measured voltage (V); time-constant (s)	Switch ON: 0 V at 1 s Switch OFF: 0 V at 1 s	—
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to DC 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	No audio amplifiers	N/A
2.1.2	Protection in service access areas	Checked by inspection, unintentional contact is unlikely during service operations.	P
2.1.3	Protection in restricted access locations	Equipment not intended for installation in restricted access locations.	N/A
2.2	SELV circuits		N/A
2.2.1	General requirements	Evaluated during separate certification of power supply.	N/A
2.2.2	Voltages under normal conditions (V)		N/A
2.2.3	Voltages under fault conditions (V)		N/A
2.2.4	Connection of SELV circuits to other circuits		N/A
2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuits.	N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values	Evaluated during separate certification of power supply.	N/A
	Frequency (Hz).....		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured circuit capacitance (nF or μ F).....		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources		P
	a) Inherently limited output		P
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		N/A
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) ..		—
2.6	Provisions for earthing and bonding		P



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.1	Protective earthing	Accessible conductive parts are reliably connected to protective earth.	P
2.6.2	Functional earthing	Functional earthing is separated from hazardous voltages by basic insulation and protective earth.	P
	Use of symbol for functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors	See below	P
2.6.3.1	General	See below	P
2.6.3.2	Size of protective earthing conductors		P
	Rated current (A), cross-sectional area (mm ²), AWG	2.5-1.0 A, Min. 0.75 mm ² , Min. 18 AWG (see appended table 1.5.1)	—
2.6.3.3	Size of protective bonding conductors		P
	Rated current (A), cross-sectional area (mm ²), AWG	2.5-1.0 A, Min. 18 AWG	—
	Protective current rating (A), cross-sectional area (mm ²), AWG	16 A, 20 A (US, CA only), Min. 18 AWG	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	From the appliance inlet to the chassis : 0.02 Ω, 0.38 V, 32 A, 2 min 0.02 Ω, 0.46 V, 40 A, 2 min	P
2.6.3.5	Colour of insulation.....	The colour combination green-and-yellow is used.	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals		P
	Rated current (A), type, nominal thread diameter (mm)	2.5-1.0 A Earthing terminal in appliance inlet is regarded as the main protective earthing terminal. Protective bonding terminal: 3.8 mm (screw type)	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Appliance inlet used.	P
2.6.5	Integrity of protective earthing	See below	P
2.6.5.1	Interconnection of equipment	No interconnection.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or overcurrent protective devices in the protective earthing / bonding conductors.	P
2.6.5.3	Disconnection of protective earth	Appliance inlet used.	P



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.4	Parts that can be removed by an operator	No operator removable parts with protective earth connection	P
2.6.5.5	Parts removed during servicing	Protective earthed parts cannot be removed in a way which impairs safety	P
2.6.5.6	Corrosion resistance	No risk of corrosion.	P
2.6.5.7	Screws for protective bonding	Metal thickness at least twice the pitch of the screw.	P
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	Protective device against overcurrent is integrated in the equipment. Protection in primary circuits short-circuits and earth faults will be provided as part of the building installation.	P
	Instructions when protection relies on building installation	Pluggable equipment type A	N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection	Pluggable type A equipment.	P
2.7.4	Number and location of protective devices	Evaluated during separate certification of power supply.	N/A
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	No safety interlocks	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm)		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.8.8	Mechanical actuators		N/A
2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation.	P
2.9.2	Humidity conditioning	48 h	P
	Relative humidity (%), temperature (°C)	93 %, 29 °C	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, supplementary, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages		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	EUT Frequency under 30 kHz.	P
2.10.1.2	Pollution degrees	Pollution degree 2.	P
2.10.1.3	Reduced values for functional insulation	The functional insulation complied with clause 5.3.4.	P
2.10.1.4	Intervening unconnected conductive parts	Considered.	P
2.10.1.5	Insulation with varying dimensions	No such transformer used.	N/A
2.10.1.6	Special separation requirements	Special separation is not used	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No insulation in circuit generating starting pulses	N/A
2.10.2	Determination of working voltage	(see appended table 2.10.2)	P
2.10.2.1	General	See below	P
2.10.2.2	RMS working voltage	(see appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(see appended table 2.10.2)	P
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply	Overvoltage category II for primary circuit and transient voltage 2 500 V _{peak}	P
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Function insulation verified by short-circuit tests according 5.3.4 c)	N/A
2.10.3.5	Clearances in circuits having starting pulses	No such circuit	N/A
2.10.3.6	Transients from a.c. mains supply	Overvoltage Category II ; Mains transient voltage is 1 500 V _{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	Not connected to 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	Measurement not relevant	N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network :	Not connected to 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	Evaluated during separate certification of power supply.	N/A
2.10.5.5.	Cemented joints	No cemented joints.	N/A
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material		P
	Number of layers (pcs)	Evaluated during separate certification of power supply.	—
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		—



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test		—
2.10.5.11	Insulation in wound components	Evaluated during separate certification of power supply.	N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U	Evaluated during separate certification of power supply.	N/A
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components	No wire with solvent-based enamel in wound	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	No additional insulation used	N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		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
2.10.7	Component external terminations		N/A
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	Evaluated during separate certification of power supply.	N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.10	Test for Pollution Degree 1 environment and insulating compound	Evaluated during separate certification of power supply.	N/A
2.10.11	Tests for semiconductor devices and cemented joints	Evaluated during separate certification of power supply.	N/A
2.10.12	Enclosed and sealed parts	Evaluated during separate certification of power supply.	N/A
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from sharp edges	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	Electrical screw connection is only connecting protective earth to chassis. Metal screw engages more than 2 threads. Screws made of insulating material are not used where electrical connections, including protective earthing are involved.	P
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating materials	P
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	P
3.1.9	Termination of conductors	Terminations can not become displaced so that clearances and creepage distances can be reduced.	P
	10 N pull test	Force of 10 N applied to the termination points of the conductors.	P
3.1.10	Sleeving on wiring	Sleeves can only be removed by breaking or cutting.	P



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2	Connection to a mains supply		P
3.2.1	Means of connection	See below	P
3.2.1.1	Connection to an a.c. mains supply	Appliance inlet used.	P
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections	Only one supply connection	N/A
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	(see appended table 1.5.1)	P
3.2.5	Power supply cords		P
3.2.5.1	AC power supply cords	See below	P
	Type	(see appended table 1.5.1)	—
	Rated current (A), cross-sectional area (mm ²), AWG	2.5-1.0 A, Min. 0.75 mm ² , Min. 18 AWG (see appended table 1.5.1)	—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Appliance inlet used.	N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards	Appliance inlet used.	N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm).....		—
3.2.9	Supply wiring space	Appliance inlet used.	N/A
3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	Appliance inlet used.	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



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	Disconnection from the mains supply		P
3.4.1	General requirement	See below	P
3.4.2	Disconnect devices	Appliance inlet used.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No parts remain energized.	N/A
3.4.5	Switches in flexible cords	No Switches in flexible cords	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single-phase equipment	N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
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	See below	P
3.5.2	Types of interconnection circuits	SELV to SELV	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	N/A
3.5.4	Data ports for additional equipment	(see appended table 2.5)	P
4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°	Fixed equipment	N/A
	Test force (N)		N/A
4.2	Mechanical strength		P
4.2.1	General		P
	Rack-mounted equipment.	No rack-mounted equipment	N/A
4.2.2	Steady force test, 10 N	No hazard.	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	No hazard.	P



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.5	Impact test	The front panel is tested according to IEC 60065 clause 19.5. The front panel tested with impact hammer and the glass do not break or crack.	P
	Fall test	No hazard.	P
	Swing test	No hazard.	P
4.2.6	Drop test; height (mm)		N/A
4.2.7	Stress relief test	Metal enclosure	N/A
4.2.8	Cathode ray tubes	No Cathode ray tubes	N/A
	Picture tube separately certified		N/A
4.2.9	High pressure lamps	No high pressure lamps	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	Not provided wall mounting accessories	N/A
4.3	Design and construction		P
4.3.1	Edges and corners	All edges and corners are rounded and smoothed.	P
4.3.2	Handles and manual controls; force (N)..... :	No handles and manual controls	N/A
4.3.3	Adjustable controls	No adjustable controls	N/A
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	P
4.3.5	Connection by plugs and sockets		N/A
4.3.6	Direct plug-in equipment	No direct plug-in equipment	N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	No 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	No flammable liquids	N/A
	Quantity of liquid (l)		N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Flash point (°C)		N/A
4.3.13	Radiation	No radiation.	N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation	No ionizing radiation	N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	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		N/A
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	The LED used for functional indicator.	—
4.3.13.6	Other types		N/A
4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No hazardous 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



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L	L.7	—
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	Evaluated during separate certification of power supply.	N/A
4.6	Openings in enclosures		P
4.6.1	Top and side openings		P
	Dimensions (mm)	Top : No openings Rear : No hazardous parts and energy level within 5°	—
4.6.2	Bottoms of fire enclosures	No openings	N/A
	Construction of the bottom, dimensions (mm) ..		—
4.6.3	Doors or covers in fire enclosures	No such parts	N/A
4.6.4	Openings in transportable equipment	Not transportable equipment	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		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	The fire enclosure is required to cover all parts.	P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	(see appended table 1.5.1)	P
4.7.3.2	Materials for fire enclosures	Metal enclosure used. Components and materials have adequate flammability classification. (see appended table 1.5.1)	P



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Other materials inside fire enclosure are minimum V-2 or HF-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No 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 is used	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V)	264 V~	—
	Measured touch current (mA)	0.32 mA	—
	Max. allowed touch current (mA)	3.5 mA	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)....		—
5.1.7	Equipment with touch current exceeding 3,5 mA	The touch current does not exceed 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	Not connected to a telecommunication network not a cable distribution system.	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)		—



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.2	Summation of touch currents from telecommunication networks	Not connected to a telecommunication network.	N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	Electric strength		P
5.2.1	General		P
5.2.2	Test procedure	(see appended table 5.2)	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	No motors	N/A
5.3.3	Transformers	Evaluated during separate certification of power supply.	P
5.3.4	Functional insulation.....:	Functional insulation complied with the requirements of c)	P
5.3.5	Electromechanical components	No such components	N/A
5.3.6	Audio amplifiers in ITE	No audio amplifier in the equipment.	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire, emission of molten metal or deformation was noted during the tests.	P
5.3.9.2	After the tests	No reduction of clearance and creepage distances. Electric strength test is made on basic, supplementary and reinforced insulation.	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	No TNV circuits	N/A
	Supply voltage (V)		---
	Current in the test circuit (mA)		---



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	Exclusions		N/A
6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	Protection of the telecommunication wiring system from overheating		N/A
	Max. output current (A)		—
	Current limiting method		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General	Not connected to a cable distribution system.	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



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples.....:		—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C).....:		N/A
A.1.3	Mounting of samples.....:		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D.....:		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material.....:		—
	Wall thickness (mm).....:		—
A.2.2	Conditioning of samples; temperature (°C).....:		N/A
A.2.3	Mounting of samples.....:		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C.....:		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N/A
	Position	Evaluated during separate certification of power supply.	—
	Manufacturer		—
	Type		—
	Rated values		—



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Method of protection..... :		—
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings..... :		N/A
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
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
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



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal(s) used		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		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	Ringling 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



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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)		N/A
	- Preferred climatic categories	Evaluated during separate certification of power supply.	N/A
	- Maximum continuous voltage	Evaluated during separate certification of power supply.	N/A
	- Combination pulse current	Evaluated during separate certification of power supply.	N/A
	Body of the VDR Test according to IEC60695-11-5.....	Evaluated during separate certification of power supply.	N/A
	Body of the VDR. Flammability class of material (min V-1).....	Evaluated during separate certification of power supply.	N/A
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)		N/A
		Evaluated during separate certification of power supply.	—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
V.1	Introduction		P
V.2	TN power distribution systems		P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current	Evaluated during separate certification of power supply.	N/A
X.2	Overload test procedure		N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		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



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
DD.1	General		N/A
DD.2	Mechanical strength test, variable N.....:		N/A
DD.3	Mechanical strength test, 250N, including end stops.....:		N/A
DD.4	Compliance.....:		N/A
EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....:		N/A
	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 (Edition / year)	Mark(s) of conformity ¹⁾
Power supply cord set (United Kingdom)	Weihai Honglin Electronic Co., Ltd. / HONGLIN	HL-044 H05VV-F HL-026	13 A, 250 V~ 3 x 0.75 mm ² 10 A, 250 V~	BS 1363-1 EN60320-1	BSI VDE
Alt.	KOREA KDK CO., LTD	KKP-650 H05VV-F KKS-16A	13 A, 250 V~ 3 x 0.75 mm ² 10 A, 250 V~	BS 1363-1 EN60320-1	BSI VDE
Power supply cord set (EU, KC type)	Weihai Honglin Electronic Co., Ltd. / HONGLIN	HL-013 H05VV-F HL-026	16 A, 250 V~ 3 x 1.0 mm ² 10 A, 250 V~	EN 60799 OVE EN 60799 IEC 60884-1 /EN 60320-1 NF C 61-314 /EN 60320-1 KC60799	VDE FIMKO SEMKO NEMKO DEMKO CEBEC IMQ OVE KEMA LCIE KC
Alt.	KOREA KDK CO., LTD	KKP4819KA / KKS-16A	10 A, 250 V~	KC60799	KC
Power supply cord set (US, CA type)	Weihai Honglin Electronic Co., Ltd. / HONGLIN	HL-002 SVT HL-004	10 A, 125 V~ 3 x 18 AWG 10 A, 125/250 V	ANSI/UL 817 CSA-C22.2 No. 2	UL cUL
Alt.	Weihai Honglin Electronic Co., Ltd. / HONGLIN	HL-002S SVT HL-004	10 A, 125 V~ 3 x 18 AWG 10 A, 125/250 V	ANSI/UL 817 CSA-C22.2 No. 2	UL cUL
Alt.	KOREA KDK CO., LTD	KKP-30 SVT KKS-16A	10 A, 125 V~ 3 x 18 AWG 10 A, 125 V	ANSI/UL 817 CSA-C22.2 No. 2	UL cUL
Power supply cord set (AU, NZ type)	Weihai Honglin Electronic Co., Ltd. / HONGLIN	HL-034 H05VV-F HL-026	13 A, 250 V~ 3 x 0.75 mm ² 10 A, 250 V~	AS/NZS 3112 AN/NZS60320-1	NSW
Alt.	KOREA KDK CO., LTD	KKP-550A H05VV-F KKS-16A	13 A, 250 V~ 3 x 0.75 mm ² 10 A, 250 V~	AS/NZS 3112 AN/NZS60320-1	NSW
Alt.	Ningbo Qiaopu Electric Co., Ltd.	D06 H05VV-F QT3	13 A, 250 V~ 3 x 0.75 mm ² 10 A, 250 V~	AS/NZS 3112 AS/NZS60320-1	ESO
Power supply cord set (JP type)	Weihai Honglin Electronic Co., Ltd. / HONGLIN	HL-019 VCTF HL-026	7 A, 125 V~ 2 x 0.75 mm ² 7 A, 125 V~	METI Article 1 Appendix 4 Appendix 1 Appendix 4	JET
Alt.	KOREA KDK CO., LTD	KKP-30T VCTF KKS-16AT	7 A 125 V~ 2 x 0.75 mm ² 7 A 125 V~	METI Article 1 Appendix 4 Appendix 1 Appendix 4	JET



IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.	Weihai Honglin Electronic Co., Ltd. / HONGLIN	HL-002 H05VV-F HL-026	7 A 125 V~ 3 x 0.75 mm ² 7 A 125 V~	METI Article 1 Appendix 4 Appendix 1 Appendix 4	JET
Alt.	Weihai Honglin Electronic Co., Ltd. / HONGLIN	HL-020 H05VV-F HL-026	7 A 125 V~ 3 x 0.75 mm ² 7 A 125 V~	METI Article 1 Appendix 4 Appendix 1 Appendix 4	JET
Appliance Inlet	Zhejiang Leci Electronics Co., Ltd.	DB-14	250 V~, 10 A	EN 60320-3:2015-11 EN 60320-3:2014 IEC 60320-1:2015 IEC 60320-3:2014 EN 60320-1:2016 EN 60320-1:2015 + AC:2016 UL60320-1	VDE ENEC UL
Main switch	Zhejiang Leci Electronics Co., Ltd.	RS601D	250 V~, 6 (4) A, 125 V~, 10 A	IEC 61058-1:2000+A1+A2 EN 61058-1:2002+A2:2008 UL 61058-1	TUV (Rheinland) VDE ENEC UL
Alt.	Ningbo Yinxian Lihe Switch Factory	RL3-4	250 V~, 6 (2) A, 125 V~, 10 A	EN 61058-1:2002+A2 UL 61058-1	SEMKO UL
SMPS	Shenzhen Megmeet Electrical Co., Ltd.	MLT199FL-J	Input: 100-240 V~, 50/60 Hz, 5.0 A Max. Output: +5VSB/0.7A, +5Vdc/2.5A, +12Vdc/2.0A, +24Vdc/9.0A	IEC 60950-1:2005 (Second Edition) +Am 1:2009 +Am 2:2013	CB by CQC (Cert. No.: CN31124)
AEM-5055UE LCD module	LG Display Co., Ltd.	LD550Dux ("x" can be A to Z denoting for Control Board and LED Driver option)	55.0 inch Control Board: 12.0 Vd.c., Max. 1.809 A	IEC/EN 60950-1:2005 (Second Edition) +Am 1:2009 +Am 2:2013	Tested in equipment CB by TUV (SUD) (Cert. No.: SG-OF-14798)
AEM-5055UE LED Driver (Optional)	KOREA TAIYO YUDEN CO LTD	KLSD550BOAH F80 ## (# can be A to Z denoting minor circuit change)	Input: 24 Vd.c., Max. 7.91 A Output: Max. 13.5 Vr.m.s. Max. 173.3 mA	IEC/EN 60950-1	Tested in equipment



IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
LED Driver Fuse (F101, F1201)	LITTELFUSE INC	Series 451	125 Vd.c., 6.3 A	UL 248-1	UL
LED Driver Fuse (F301)	LITTELFUSE INC	Series 451	125 Vd.c., 2 A	UL 248-1	UL
LED Driver Inductor (L101, L201, L1101, L1201)	SEJIN ELECOM CO LTD	Interchangeable	22.0 uH	IEC/EN 60950-1	Tested in equipment
LED Driver Inductor (L301)	TAIYO YUDEN	Interchangeable	47.0 uH	IEC/EN 60950-1	Tested in equipment
LED Driver PCB	Interchangeable	Interchangeable	V-0, Min. 105 °C 1.6 mm thickness	UL 796	UL
AEM-4549UE LCD module	LG Display Co., Ltd.	LD490Dux ("u" can be U to P denoting for resolution, "x" can be A to Z denoting for Control Board and LED Driver option)	49.0 inch Control Board: 12.0 Vd.c., Max. 0.975 A	IEC/EN 60950-1 IEC 60950-1 :2005 (Second Edition) +Am 1:2009 +Am 2:2013	Tested in equipment CB by TUV (SUD) (Cert. No.: SG PSB-OF-00917)
AEM-4549UE LED Driver (Optional)	KOREA TAIYO YUDEN CO LTD	KLSD490RAM HF56 # (# can be C/D, A to Z denoting minor circuit change)	Input: 24 Vd.c., Max. 6.83 A Output: Max. 9.48 Vr.m.s., Max. 323.4 mA	IEC/EN 60950-1	Tested in equipment
LED Driver Fuse (F101, F1101)	LITTELFUSE INC	Series 451	125 Vd.c., 10 A	UL 248-1	UL
LED Driver Fuse (F301)	LITTELFUSE INC	Series 451	125 Vd.c., 2 A	UL 248-1	UL
LED Driver Inductor	SEJIN ELECOM CO LTD	Interchangeable	15.0 uH	IEC/EN 60950-1	Tested in equipment
LED Driver Inductor	TAIYO YUDEN CO LTD	Interchangeable	47.0 uH	IEC/EN 60950-1	Tested in equipment
LED Driver PCB	Interchangeable	Interchangeable	V-0, Min. 105 °C 1.6 mm thickness	UL 796	UL
All PCB (except SMPS)	Interchangeable	Interchangeable	V-0, 130 °C	UL 94	UL
Insulation sheet (for SMPS)	SICHUAN DONGFANG INSULATING MATERIAL CO.,LTD.	DFR3738A	V-0, Min 0.4 mm	UL 94	UL
Alt.	Interchangeable	Interchangeable	Min. V-0, Min. 0.4 mm	UL 94	UL
Metal enclosure	Interchangeable	Interchangeable	Metal, Min. 1.0 mm	IEC/EN 60950-1	Tested in equipment



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

Supplementary information:

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

1.5.1	TABLE: Opto Electronic Devices	N/A	
Manufacturer			
Type			
Separately tested			
Bridging insulation.....			
External creepage distance			
Internal creepage distance			
Distance through insulation			
Tested under the following conditions			
Input			
Output			
supplementary information			
- SMPS was evaluated in the CB.			

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
* AEM-5055UE						
90	2.15	-	186.86	F1	2.15	Max. normal load. (60 Hz)
100	1.93	2.5	184.87	F1	1.93	
240	0.83	1.0	177.23	F1	0.83	
264	0.75	-	177.05	F1	0.75	
90	2.13	-	186.83	F1	2.13	Max. normal load. (50 Hz)
100	1.92	2.5	184.85	F1	1.92	
240	0.81	1.0	177.21	F1	0.81	
264	0.74	-	177.03	F1	0.74	
* AEM-4549UE						
90	1.04	-	93.04	F1	1.04	Max. normal load. (60 Hz)
100	0.92	1.0	91.73	F1	0.92	
240	0.45	0.5	89.72	F1	0.45	
264	0.42	-	89.77	F1	0.42	



IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
90	1.03	-	93.03	F1	1.03	Max. normal load. (50 Hz)
100	0.91	1.0	91.72	F1	0.91	
240	0.44	0.5	89.71	F1	0.44	
264	0.41	-	89.74	F1	0.41	
Supplementary information: - Video Signal: Full white color with Max. brightness & contrast.						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
supplementary information: - SMPS was evaluated in the CB.					

2.1.1.5 c) 2)	TABLE: stored energy		N/A
Capacitance C (μ F)	Voltage U (V)	Energy E (J)	
supplementary information: - SMPS was evaluated in the CB.			

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			N/A
Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components	
	V peak	V d.c.		
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)			
supplementary information: s-c = Short circuit - SMPS was evaluated in the CB.				



IEC 60950-1							
Clause	Requirement + Test	Result - Remark			Verdict		
2.5	TABLE: Limited power sources					P	
Circuit output tested: See below							
Note: Measured Uoc (V) with all load circuits disconnected:(see below)							
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA		
			Meas.	Limit	Meas.	Limit	
* AEM-5055UE							
DVI – IN Port	#1	0	0	8	0	100	
HDMI – 1 Port	#1	0	0	8	0	100	
HDMI – 2 Port	#2	0	0	8	0	100	
DP – IN Port	#1	0	0	8	0	100	
VGA – IN Port	#1	3.04	0	8	0	100	
DP – OUT Port	#1	0	0	8	0	100	
RS232 IN	#1	0	0	8	0	100	
RS232 OUT	#1	0	0	8	0	100	
* AEM-4549UE							
DVI – IN Port	#1	0	0	8	0	100	
HDMI – 1 Port	#1	0	0	8	0	100	
HDMI – 2 Port	#2	0	0	8	0	100	
DP – IN Port	#1	0	0	8	0	100	
VGA – IN Port	#1	3.02	0	8	0	100	
DP – OUT Port	#1	0	0	8	0	100	
RS232 IN	#1	0	0	8	0	100	
RS232 OUT	#1	0	0	8	0	100	
supplementary information:							
s-c = Short circuit, o-c = Open circuit							

2.10.2	Table: working voltage measurement			N/A	
Location	RMS voltage (V)	Peak voltage (V)	Comments		
Basic / Functional insulation:					
-	-	-	-		
Reinforced insulation:					
-	-	-	-		
supplementary information:					
- SMPS was evaluated in the CB.					



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

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Basic / Functional insulation:							
Primary and Protective earth	340	240	2.0	6.3	2.5	6.3	
-	-	-	-	-	-	-	
Reinforced insulation:							
-	-	-	-	-	-	-	
Supplementary information: - SMPS was evaluated in the CB.							

2.10.5	TABLE: Distance through insulation measurements						N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)		
Supplementary information: - SMPS was evaluated in the CB.							

4.3.8	TABLE: Batteries									N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available										N/A
Is it possible to install the battery in a reverse polarity position?										N/A
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition	-	-	-	-	-	-	-	-	-	
Max. current during fault condition	-	-	-	-	-	-	-	-	-	



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

Test results:			Verdict
- Chemical leaks			N/A
- Explosion of the battery			N/A
- Emission of flame or expulsion of molten metal			N/A
- Electric strength tests of equipment after completion of tests			N/A
Supplementary information:			

4.3.8	TABLE: Batteries		N/A
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Battery category : Manufacturer : Type / model..... : Voltage : Capacity..... : Tested and Certified by (incl. Ref. No.)..... : Circuit protection diagram:			
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MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	-
Language(s)	-
Close to the battery	-
In the servicing instructions	-
In the operating instructions	-



IEC 60950-1							
Clause	Requirement + Test				Result - Remark		Verdict
4.5	TABLE: Thermal requirements						P
	Supply voltage (V)	90 V~ / 60 Hz	264 V~ / 60 Hz	90 V~ / 60 Hz	264 V~ / 60 Hz		—
	Ambient T _{min} (°C)	-	-	-	-		—
	Ambient T _{max} (°C)	-	-	-	-		—
Maximum measured temperature T of part/at.....:		T (°C) at T _{ma} (40 °C)				Allowed T _{max} (°C)	
		AEM-5055UE		AEM-4549UE			
Transformer (T1) coil		67.7	65.8	66.6	65.7	110	
Transformer (T1) core		69.5	67.5	68.6	67.5	110	
Transformer (T9) coil		86.4	84.1	83.2	82.2	110	
Transformer (T9) core		79.5	77.4	77.1	76.6	110	
Linefilter (L7) coil		79.9	59.7	75.9	58.8	110	
Linefilter (L2) coil		91.6	61.2	85.2	60.3	110	
Linefilter (L3) coil		91.4	59.4	84.0	58.6	110	
Linefilter (L4) coil		88.7	64.2	83.5	63.7	110	
Linefilter (L4) core		84.2	62.5	79.5	62.2	110	
Linefilter (L5) coil		84.2	63.1	79.7	62.7	110	
Linefilter (L5) core		81.0	61.8	77.0	61.5	110	
Elec. cap EC2 body		68.6	61.6	66.1	61.0	105	
PCB near T1		61.8	60.1	60.8	59.9	105	
PCB near T9		66.9	71.8	70.8	69.9	105	
Internal wire		54.6	49.5	53.3	49.2	75	
Switch body		47.1	44.5	46.6	44.9	95	
Inlet body		46.0	44.1	45.6	44.5	95	
Front Display surface		50.5	49.9	49.6	49.7	95	
Enclosure (Metal)		47.2	46.0	46.8	46.0	70	
Ambient		40.0 (21.7 °C)	40.0 (22.6 °C)	40.0 (19.9 °C)	40.0 (19.2 °C)	-	
Maximum measured temperature T of part/at.....:		T (°C) at T _{ma} (40 °C)				Allowed T _{max} (°C)	
Supplementary information: - Maximum temperature T at T _{ma} (40 °C) is calculated. (T at T _{ma} = T - T _{amb} + T _{ma}) - Temperature limits include less 10 °C for thermocouple measurement method.							
Temperature T of winding:		t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)
-		-	-	-	-	-	-
-		-	-	-	-	-	-
Supplementary information:							



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm)	≤ 2 mm	—
Part		Test temperature (°C)	Impression diameter (mm)
Supplementary information: - SMPS was evaluated in the CB.			

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

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Equipment protective earthing terminal	0.14	3.5	Switch "e" Position: Open Polarity "p1" Position: Normal Primary Switch Position: On	
Accessible parts and not connected to protective earth (LCD surface)	0.02	0.25	Switch "e" Position: Open Polarity "p1" Position: Normal Primary Switch Position: On	
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	
Basic / Functional insulation:				
Mains pole and Accessible parts (earthed)	AC	2 006	No	
Reinforced:				
Mains pole and sec. SELV circuits (DVI, HDMI, DISPLAY, VGA, RS232 Port)	AC	3 000	No	
Supplementary information:				

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C)	(23.0 ± 5.0) °C	—
	Power source for EUT: Manufacturer, model/type, output rating	YOUNG SHIN ENGINEERING CO.,LTD. / BORIS-5200 / 220 V~, 45.4 A	—



IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
* AEM-5055UE						
Opening	Blocked	90	2 h 25 min	F1	2.15	Stable temp. Normal operation. Max. temp T1 coil: 51.2 °C Max. temp T1 core: 53.4 °C Max. temp T9 coil: 70.8 °C Max. temp T9 core: 64.1 °C (Ambient: 21.9 °C) No hazard. NCD.
C181 (LED Driver)	S/C	90	10 min	F1	0.02	Unit shutdown immediately. No hazard. NCD.
Q101 (LED Driver)	S/C	90	10 min	F1	0.02	Unit shutdown immediately. No hazard. NCD.
IC101 (LED Driver)	S/C	90	10 min	F1	0.02	Unit shutdown immediately. No hazard. NCD.
* AEM-4549UE						
Opening	Blocked	90	2 h 31 min	F1	1.04	Stable temp. Normal operation. Max. temp T1 coil: 49.7 °C Max. temp T1 core: 51.5 °C Max. temp T9 coil: 65.9 °C Max. temp T9 core: 60.1 °C (Ambient: 22.5 °C) No hazard. NCD.
C101 (LED Driver)	S/C	90	10 min	F1	0.02	Unit shutdown immediately. No hazard. NCD.
Q501 (LED Driver)	S/C	90	10 min	F1	0.02	Unit shutdown immediately. No hazard. NCD.
D1005 (LED Driver)	S/C	90	10 min	F1	0.02	Unit shutdown immediately. No hazard. NCD.
Supplementary information: NCD=No component damaged, NH=No hazard. - SMPS was evaluated in the CB.						



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

C.2	TABLE: transformers	N/A
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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)
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers

supplementary information:

C.2	TABLE: transformers	N/A
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to TMP/CTF stage 1 or WMT/CTF stage 2 procedure has been used.

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

Information technology equipment – Safety –

Part 1: General requirements

Differences according to	EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
Attachment Form No.	EU_GD_IEC60950_1F
Attachment Originator	SGS Fimko Ltd
Master Attachment	Date 2014-02
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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
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"		P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Annex ZB (normative) Annex ZD (informative)	Normative references to international publications with their corresponding European publications Special national conditions IEC and CENELEC code designations for flexible cords	P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 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
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx Protection against excessive sound pressure from personal music players</p>		N/A
	<p>Zx.1 General</p> <p>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:</p> <ul style="list-style-type: none"> – 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>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:</p> <ul style="list-style-type: none"> – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. <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:</p> <ul style="list-style-type: none"> – hearing aid equipment and professional equipment; <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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<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
	<p>Zx.2 Equipment requirements</p> <p>No safety provision is required for equipment that complies with the following:</p> <p>– 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</p> <p>– 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.</p> <p>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.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p> <p>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




IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>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> <p>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</p> <p>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> <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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p> <div style="text-align: center;">  </div> <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>		N/A
	<p>Zx.4.1 Wired listening devices with analogue input</p> <p>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.</p> <p>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).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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</p> <p>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</p> <p>In wireless mode:</p> <ul style="list-style-type: none"> – 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>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p>Zx.5 Measurement methods</p> <p>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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

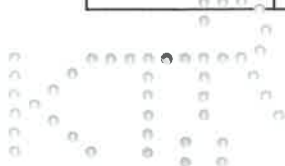
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)									
Clause	Requirement + Test	Result - Remark	Verdict						
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective 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>		N/A						
2.7.2	This subclause has been declared 'void'.		N/A						
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A						
3.2.5.1	<p>Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table style="margin-left: 20px;"> <tr> <td>Up to and including 6 </td> <td>0,75^{a)} </td> </tr> <tr> <td>Over 6 up to and including 10 </td> <td>(0,75)^{b)} 1,0 </td> </tr> <tr> <td>Over 10 up to and including 16 </td> <td>(1,0)^{c)} 1,5 </td> </tr> </table> <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>	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
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								

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		P
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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.1 (A11:2009)	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite 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>		



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>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.</p> <p>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.</p> <p>Justification the Heavy Current Regulations, 6c</p>		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.		P
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		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	<p>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:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p>		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 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



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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	In Finland, Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In Finland, Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3 (A11:2009)	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

**Annex ZD
(informative)**

IEC and CENELEC code designations for flexible cords

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



Attachment 2 - National Differences

Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)			
Clause	Requirement + Test	Result – Remark	Verdict
1.2	DEFINITIONS		P
	After definition 'PERSON, SERVICE', insert the following new definition: POTENTIAL IGNITION SOURCE.....1.2.12.201		P
1.5	COMPONENTS		P
1.5.1	First paragraph, insert the following text after the words 'IEC component standard': or the relevant Australian/New Zealand Standard In the Note, insert the following text after the word 'standard': or the relevant Australian/New Zealand Standard Second paragraph, delete the words 'without further evaluation'		P
1.5.2	First paragraph, insert the following text after the word 'standard' or an Australian/New Zealand Standard First paragraph, second dash item, second line, insert the following text after the word 'standard' or an Australian/New Zealand Standard First paragraph, second dash item, last line, insert the following text after the word 'standard': or an Australian/New Zealand Standard		P
1.7	MARKINGS AND INSTRUCTIONS		P
1.7.1.3	Delete existing text and replace with the following: Graphical symbols placed on the equipment as a requirement of this standard, shall be in accordance with IEC 60417 or ISO 3864-2 or ISO 7000, if available. In the absence of suitable symbols, the manufacturer may design specific graphical symbols. Symbols as required by this standard placed on the equipment shall be explained in the user manual		P
2.9	ELECTRICAL INSULATION		P
2.9.2	Variation Second paragraph, delete the word 'designated'		P
3.2.5	POWER SUPPLY CORDS		P



Attachment 2 - National Differences

Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013															
Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)															
Clause	Requirement + Test	Result – Remark	Verdict												
Table 3B	Variation Delete the first four rows and replace with the following: <table border="1" data-bbox="399 443 1005 750"> <tr> <td>Over 0.2 up to and including 3</td> <td>0.5a</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	0.5a	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]		N/A
Over 0.2 up to and including 3	0.5a	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]													
	Delete NOTE 1 and renumber existing NOTE 2 as 'NOTE'		N/A												
	Delete Footnote a and replace with the following: a This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the to the plug does not exceed 2 m (0,5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191)		N/A												
4.3	DESIGN AND CONSTRUCTION		N/A												
4.3.6	Variation Delete the third paragraph and replace with the following:		N/A												
	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		N/A												
4.3.8	Addition Eighth paragraph, insert the following new note after the first dash item:		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.		N/A												



Attachment 2 - National Differences

Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)			
Clause	Requirement + Test	Result – Remark	Verdict
4.3.13.5.1	Variation Delete the first paragraph and replace with the following: Except as permitted below, equipment shall be classified and labelled according to IEC 60825-1 or AS/NZS 60825.1, IEC 60825-2 or AS/NZS 60825.2 and IEC 60825-12, as applicable		N/A
	Third paragraph, first sentence, after 'IEC 60825-1', insert the following text: or AS/NZS 60825.1		N/A
	Fourth paragraph, after 'IEC 60825-1', insert the following text: or AS/NZS 60825.1		N/A
4.7	RESISTANCE TO FIRE		N/A
4.7	Addition At the end of Clause 4.7, insert the following text: For alternate tests refer to Clause 4.7.201		N/A
6	CONNECTION TO TELECOMMUNICATIONS NETWORKS		N/A
6.2.2	Variation For Australia only, delete the first paragraph and Note, and replace with the following: In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2		N/A
6.2.2.1	Variation For Australia only, delete the first paragraph including the Notes, and replace with the following: In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator Reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, U_c , is: for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and 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 for 6.2.1 a): 3kV; and for 6.2.1b) and 6.2.1c): 1.5kV		N/A

Attachment 2 - National Differences

Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)			
Clause	Requirement + Test	Result – Remark	Verdict
	NOTE 201 Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.		N/A
	NOTE 202 The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
7	CONNECTION TO CABLE DISTRIBUTION NETWORK		N/A
7.3	Addition Add the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes		N/A
Annex P	Addition Add the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets		P
	Special national conditions (if any)		N/A
1.2.12	FLAMMABILITY		P
1.2.12.15	Addition After Clause 1.2.12.15, insert 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, insert new Clause 4.1.201 as follows:		N/A

Attachment 2 - National Differences

Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)			
Clause	Requirement + Test	Result – Remark	Verdict
4.1.201	Display devices used for television purposes Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television receivers, specified in AS/NZS 60065		N/A
4.3	DESIGN AND CONSTRUCTION		N/A
4.3.8	Addition After Clause 4.3.8, add the following new clause as follows		N/A
4.3.8.201	Products containing coin/button cell batteries and batteries designated R1 The requirements of AS/NZS 60065:2012 Amendment 1:2015, Clause 14.10.201 apply for this Clause.		N/A
4.7	RESISTANCE TO FIRE		N/A
4.7.3.6	Addition After Clause 4.7.3.6, add new clauses as follows:		N/A
4.7.201	Resistance to fire—Alternative tests		N/A
4.7.201.1	General Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the apparatus, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.		N/A
	b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1,750 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
	Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5		N/A

Attachment 2 - National Differences

Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)			
Clause	Requirement + Test	Result – Remark	Verdict
	For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5		N/A
	The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring		N/A
4.7.201.2	<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>		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.</p> <p>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>		N/A



Attachment 2 - National Differences**Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013**

Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)

Clause	Requirement + Test	Result – Remark	Verdict										
	<table border="1"> <tr> <td>Clause of AS/NZS 60695.11.5</td> <td>Change</td> </tr> <tr> <td colspan="2">9 Test procedure</td> </tr> <tr> <td>9.2 Application of Needle-flame</td> <td>Delete the first and second paragraphs and replace with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s ± 1 s</td> </tr> <tr> <td>9.3 Number of test specimens</td> <td>Delete existing text and replace with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.</td> </tr> <tr> <td>11 Evaluation of test results</td> <td>Delete existing text and replace with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15s</td> </tr> </table>	Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of Needle-flame	Delete the first and second paragraphs and replace with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s ± 1 s	9.3 Number of test specimens	Delete existing text and replace with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.	11 Evaluation of test results	Delete existing text and replace with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15s		N/A
Clause of AS/NZS 60695.11.5	Change												
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9.3 Number of test specimens	Delete existing text and replace with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.												
11 Evaluation of test results	Delete existing text and replace with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15s												
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the sample tested was not thicker than the relevant part		N/A										



Attachment 2 - National Differences

Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)			
Clause	Requirement + Test	Result – Remark	Verdict
4.7.201.4	Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3 by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.		N/A
	NOTE 1 If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing.		N/A
	NOTE 2 If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing		N/A
	NOTE 3 Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		N/A
4.7.201.5	Testing of printed boards The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE.		N/A



Attachment 2 - National Differences

Australia/New Zealand – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: AU_NZ_ND_IEC60950_1F, Date (2017-06)			
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>Compliance shall be determined using the smallest thickness of the material.</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



Attachment 2 - National Differences

ATTACHMENT TO TEST REPORT IEC 60950-1 with A1:2009 and A2:2013 CANADA NATIONAL DIFFERENCES	
Information technology equipment – Safety – Part 1: General requirements	
Differences according to	CAN/CSA-C22.2 No. 60950-1-07, Amd 1:2011, Amd 2:2014
Attachment Form No.	CA_ND_IEC60950_1F
Attachment Originator.....	CSA
Master Attachment	Date (2015-05)
Copyright © 2015 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.	

1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A:	Considered	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC/NEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A



Attachment 2 - National Differences

1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and "Class 2" or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.		N/A
2.6	Equipment with isolated ground (earthing) receptacles are required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.		P
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		P
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		P
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A



Attachment 2 - National Differences

3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for US/Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).		N/A
3.3.5	First column of Table 3E revised to require "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
4.3.13.5.1	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043.		N/A

Attachment 2 - National Differences

Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
<p>OTHER DIFFERENCES</p> <p>The following key national differences are based on requirements other than national regulatory requirements.</p>			
1.5.1	<p>Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include:</p> <p>attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.</p>	See safety component list	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuit.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).		N/A



Attachment 2 - National Differences

2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.	(see appended table 5.3)	P
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
Annex EE	UL articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A



Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	<p>Add the following new notes.</p> <p>Note: Even if the equipment is designed as Class I, the equipment is regarded as CLASS 0I EQUIPMENT (see 1.2.4.3A) when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.</p>		P
1.2.4.3A	<p>Add the following new clause.</p> <p>1.2.4.3A CLASS 0I EQUIPMENT</p> <p>Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by:</p> <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. <p>Note – CLASS 0I EQUIPMENT may have a part constructed with Double Insulation or Reinforced Insulation.</p>		N/A
1.3.2	<p>Add the following notes after the first paragraph:</p> <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



Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**


Attachment Form No.:JP_ND_IEC60950_1F

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
1.7	<p>Replace EE.2 and EE.4 with the following:</p> <p>JA.1 Shredder warning JA.3 Shredder power disconnection</p>		P



Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
1.7.1.2	<p>Replace first and second dashed paragraphs with the followings:</p> <p>- manufacturer's or responsible company's name or trade-mark or identification mark;</p> <p>- manufacturer's or responsible company's model identification or type reference;</p>		P
1.7.2.1	<p>Add the following after the second paragraph.</p> <p>Instruction or equipment marking regarding safety shall be written in Japanese unless otherwise permitted in this standard.</p>	Must be considered before marketed in Japanese.	N/A
1.7.2.5	<p>Replace the last sentence with the following: An acceptable marking for an electric shock hazard is</p>  (6.2.4 of JIS S 0101).		N/A
1.7.5	In the second paragraph, add "or JIS C 8303:2007" after the reference number, IEC/TR 60083:1997".		N/A
1.7.5A	<p>Add the following new clause after 1.7.5.</p> <p>1.7.5A Power supply cord set If appliance coupler according to IEC60320-1, C.14(rated current: 10A) is used in equipment whose rated voltage is less than 125V and rated current is over 10A, the following instruction or equivalent shall be described in the operating instruction. " Use only designated cord set attached in this equipment"</p> <p><i>Example in Japanese:</i> "この機器に同梱(欄)した指定の電源コードセットだけを使用して下さい"</p> <p>If appliance coupler is used for connection to the mains and if the cord set is not provided within the package for the equipment, suitable information regarding to the cord set shall be described in the operating instruction</p> <p><i>Note</i> Since the combination of appliance inlet with earthing pin and two-core cord set (without earthing conductor) is special, the cord set should be attached in the equipment and the operating <i>instruction should provide the information that the cord set is exclusively used with the equipment and not allowed to use with other equipment.</i></p>		N/A



Attachment 2 - National Differences

JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013


Attachment Form No.:JP_ND_IEC60950_1F

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</p> <p>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></p> <p>“必ず接地接続を行ってください。”</p> <p>- the following instruction 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></p> <p>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</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 operating instruction. (See 2.6.3.2)</p>		N/A



Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F

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>		P
2.5	Replace "IEC 60730-1" with "JIS C 9730-1" (in item b)).		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 the first paragraph.</p> <p>However where the single core conductor is used for protective earthing lead or earthing cord for CLASS 01 EQUIPMENT, either of the following condition shall be met.</p> <ul style="list-style-type: none"> - Use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having equivalent to or more strength and thickness. - Single core cord or single core cable with 1.25 mm² or more cross-sectional area 		N/A
2.6.3.5	<p>Add the following after the first 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 formed together with mains plug and appliance connector.</p>		N/A



Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	<p>Replace the first 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>		P
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:</p> <p>Note For CLASS 0I EQUIPMENT,1.7.14A is applied instead of this requirement.</p>		N/A
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</p> <p>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	Replace "ISO 3864, No. 5036" with "6.2.4 of JIS S 0101".		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>		P
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

Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
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. 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
2.10.9	Replace "1.4.5" in the third 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 4th dashed paragraph.</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>		N/A
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>		P



Attachment 2 - National Differences

JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
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. 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
3.3.7	<p>Add the following after the first sentence:</p> <p>This requirement is not applicable to the external earthing terminal of CLASS 0I EQUIPMENT.</p>		N/A
4.2.8	<p>Add the following after the first paragraph:</p> <p>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.</p>		N/A
4.3.4	<p>Add the following after the first sentence:</p> <p>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.</p>		N/A
4.3.5	<p>Replace the first dashed paragraph with the following.</p> <p>Within a manufacturer's unit or system, plugs and sockets likely to be used by the OPERATOR or by a SERVICE PERSON shall not be employed in a manner likely to create a hazard due to misconnection. In particular, connectors complying with IEC 60320/JIS C 8283 series of standards or JIS C 8303 or JIS C 8358 shall not be used for SELV CIRCUITS or TNV CIRCUITS. Keying, location or, in the case of connectors accessible only to a SERVICE PERSON, clear markings are permitted to meet the requirement.</p>		N/A



Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	<p>Replace the 1st paragraph with the following</p> <p>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>		N/A
4.4.2	<p>Replace the paragraph with the following:</p> <p>HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall also comply with Annex JA.</p>		N/A
4.5.3	<p>Add the following note to footnote b) of Table 4B:</p> <p>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.</p>		P
5.1.3	<p>Add a note after the first paragraph as follows:</p> <p>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.</p>		P



Attachment 2 - National Differences

JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict		
5.1.6	Replace Table 5A. as follows		P		
	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 -	- -		
<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>					
Annex G	<p>Replace the paragraph before Table G.2 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, and 1.5.1 of this standard in which dimension is comply with JIS C 8283 series, JIS C 8303 or IEC 60309-2.</p>		P		
Annex V V.1	Replace "3.1.2" in the first line of V.1 with "312" in the first line.		N/A		



Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
Annex W W.1	<p>Replace the third sentence in the first paragraph with the following:</p> <p>Floating circuits can exist in CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and earthed circuits can exist in CLASS II EQUIPMENT.</p>		N/A
Annex BB	This annex is not applicable.		N/A
Annex CC CC.2	<p>Replace the third dashed paragraph with the following:</p> <p><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></p>		N/A
CC.3	<p>Add note at end of CC.3:</p> <p>Note: The fast blow fuse should be the one complying with JIS C 6575-2.</p>		N/A



Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F


Clause	Requirement + Test	Result - Remark	Verdict
CC.4	<p>Replace the 2nd dashed paragraph with the following:</p> <ul style="list-style-type: none"> - 10 000 cycles of turning enable on and off with a 100 $\Omega \pm 5 \Omega$ resistor and a 425 uF ± 10 uF capacitor in parallel with the output; <p>Replace the 4th dashed paragraph with the following:</p> <ul style="list-style-type: none"> - 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; <p>Replace the 5th dashed paragraph with the following:</p> <ul style="list-style-type: none"> -10 000 cycles of turning the input pin on and off with a capacitor rated 425 uF ± 10 uF connected to the input supply while keeping enable active and shorting the output; <p>Replace the 6th dashed paragraph with the following:</p> <ul style="list-style-type: none"> -10 000 cycles of turning the input pin on and off with an ferrite-core inductor having 350 mH ± 10 mH inductance at 1 kHz and less than 1 Ω d.c. resistance connected to the input supply and return while keeping enable active and shorting the output; <p>Replace the 10th dashed paragraph with the following:</p> <ul style="list-style-type: none"> -3 cycles of exposing the device (not energized) to 70 °C ± 2 °C for 24 h; followed by at least 1 h at room ambient; followed by at least 3 h at -30 °C ± 2 °C; followed by 3 h at room ambient; <p>Replace the 11th dashed paragraph with the following:</p> <ul style="list-style-type: none"> -10 cycles of exposing the device (while energized) to 50 °C ± 2 °C for 10 min; followed by 10 min at 0 °C ± 2 °C with a 5 min period of transition from one state to the other; 		N/A



Attachment 2 - National Differences

JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
Annex EE	<p>Replace Annex EE with the following Annex JA.</p> <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> <p>子供が使用することによって、傷害などの危害が発生するおそれがある ; (that use by infants/children may cause a hazard of injury etc.)</p> <p>文書投入口に手を触れることによって、細断機構に引き込まれるおそれがある ; (that a hand can be drawn into the mechanical section for shredding when touching the document-slot)</p> <p>文書投入口に衣類が触れることによって、細断機構に引き込まれるおそれがある ; (that clothing can be drawn into the mechanical section for shredding when touching the document-slot)</p> <p>文書投入口に髪の毛が触れることによって、細断機構に引き込まれるおそれがある ; (that hairs can be drawn into the mechanical section for shredding when touching the document-slot)</p> <p>- in case of equipment incorporating a commutator motor, 可燃性ガスを噴射することによって引火又は爆発するおそれがある (that equipment may catch fire or explode by spraying of flammable gas.)</p> <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>		N/A

Attachment 2 - National Differences**JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013**

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
	<p>JA.3 Disconnection from the mains supply 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. 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 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> <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>		N/A



Attachment 2 - National Differences

JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013

Attachment Form No.:JP_ND_IEC60950_1F

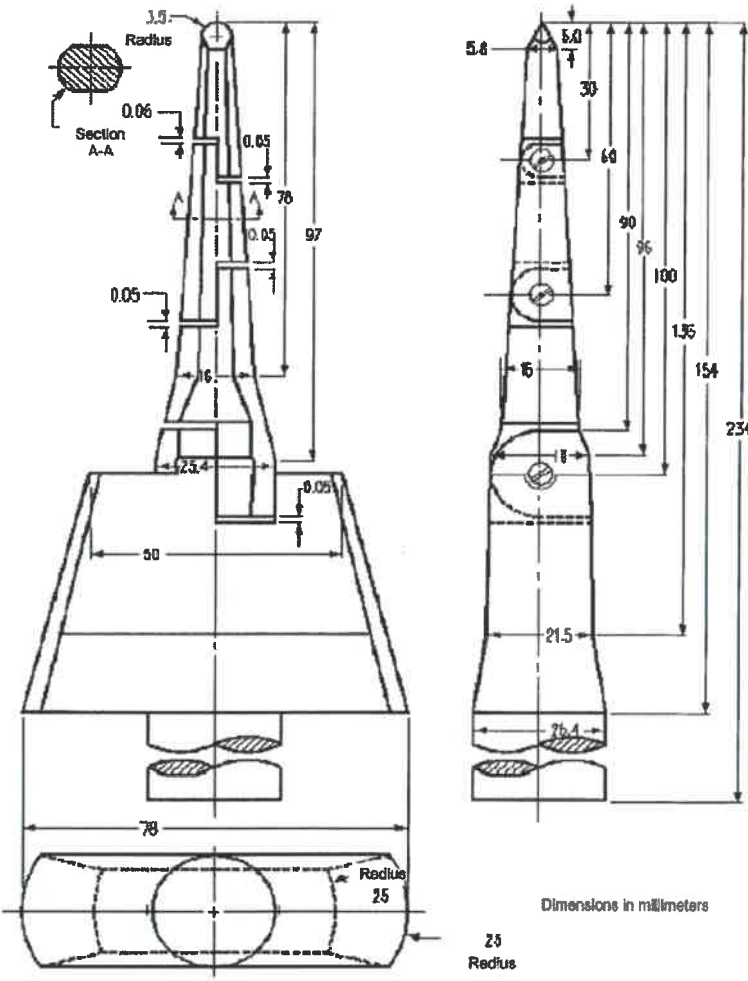
Clause	Requirement + Test	Result - Remark	Verdict
	 <p style="text-align: center;">Dimensions in millimeters</p> <p style="text-align: center;">25 Radius</p>		N/A

Figure JA.1 Test finger

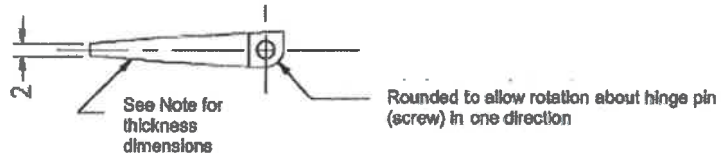
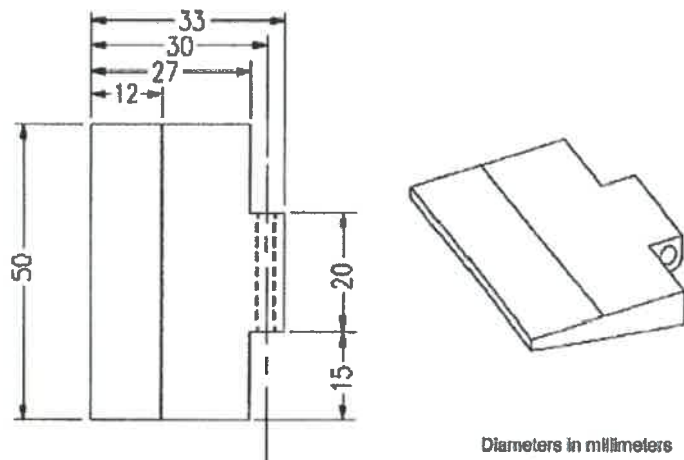
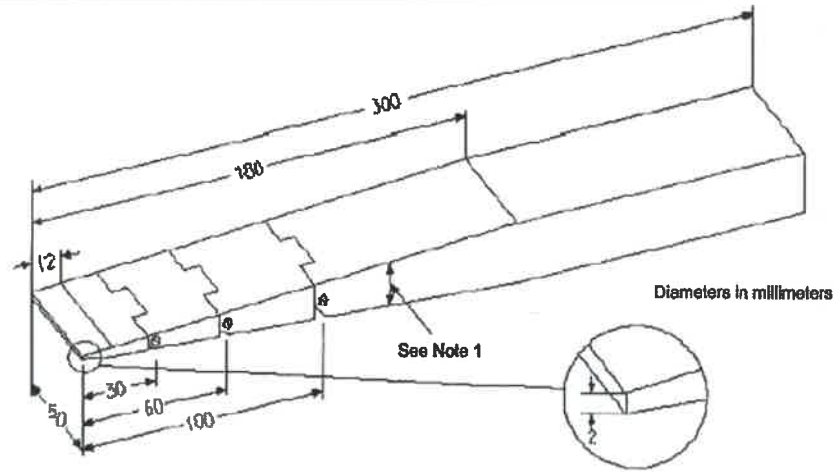


Attachment 2 - National Differences

JAPAN - Differences to IEC 60950-1 with A1: 2009 and A2:2013

Attachment Form No.:JP_ND_IEC60950_1F

Clause	Requirement + Test	Result - Remark	Verdict
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Details of the tip of wedge

Distance from the tip (mm)	Thickness of probe (mm)
0	2
12	4
180	24

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.

Figure JA.2 Wedge-probe



Attachment 2 - National Differences

USA – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: US_ND_IEC60950_1F, Date (2014-07)			
Clause	Requirement + Test	Result - Remark	Verdict
NATIONAL CONDITIONS BASED ON REGULATIONS			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3- wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 shall be marked with the voltage rating and "Class 2" or equivalent. The marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator- accessible unless it is not interchangeable.		N/A
2.6	Equipment with isolated ground (earthing) receptacles are required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as		P

Attachment 2 - National Differences

USA – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: US_ND_IEC60950_1F, Date (2014-07)			
Clause	Requirement + Test	Result - Remark	Verdict
	supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.		P
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		P
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 & 12 of the CEC.		P
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).		N/A
3.3.5	First column of Table 3E revised to require "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating		N/A

Attachment 2 - National Differences

USA – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: US_ND_IEC60950_1F, Date (2014-07)			
Clause	Requirement + Test	Result - Remark	Verdict
	greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).		
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
4.3.13.5.1	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
4.7.3.1	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043.		N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
OTHER NATIONAL DIFFERENCES			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, battery backup systems, battery packs, cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters,		P

Attachment 2 - National Differences**USA – National Differences to IEC 60950-1/A1:2009 and A2:2013**

Attachment Form No.: US_ND_IEC60950_1F, Date (2014-07)

Clause	Requirement + Test	Result - Remark	Verdict
	industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables.		
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, a TNV-2 Circuit or a Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	No TNV circuits	N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is	(see appended table 5.3)	P

Attachment 2 - National Differences

USA – National Differences to IEC 60950-1/A1:2009 and A2:2013			
Attachment Form No.: US_ND_IEC60950_1F, Date (2014-07)			
Clause	Requirement + Test	Result - Remark	Verdict
	interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
Annex EE	UL articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A





Attachment 2 - National Differences

China – Differences to IEC 60950-1:2005 (Test results according to last modification date 2013-09-26 in CB Bulletin) National standard reference: GB 4943.1-2011			
Clause	Requirement + Test	Result - Remark	Verdict
1.1.2	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. 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;	The equipment is intended for only used at altitude not exceeding 2 000 m.	N/A
1.4.5	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	+10%,-10%	P
1.4.12.1	T _{ma} in clause 1.4.12.1 amended as: T _{ma} : is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, T _{ma} : is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.	T _{ma} : 40 °C The equipment is intended for only used at altitude not exceeding 2 000 m.	P
1.5.2	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.	The equipment is intended for only used at altitude not exceeding 2 000 m.	N/A
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.		P
1.7.1	Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	100-240 V~, 50/60 Hz	P



Attachment 2 - National Differences



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: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."</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. "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. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.</p>	<p>The equipment is intended for only used at altitude not exceeding 2 000 m. The warning wording used.</p> <p>The equipment is intended for only used at not-tropical climate regions. The warning wording used.</p>	P
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. Delete note of Clause 2.7.1.</p>		P
2.9	<p>Humidity conditioning This section applies for equipment to be operated at tropical climatic conditions, humidity conditioning dealt with tropical climatic conditions. For equipment not to be operated at tropical climatic conditions, its humidity conditioning complies with rules of CTL 624/07.</p>	<p>The equipment is intended for only used at not-tropical climate regions.</p> <p>Conducted for 48 h, 93 %, 29 °C</p>	P



Attachment 2 - National Differences

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 $40\pm 2^{\circ}\text{C}$ and a relative humidity of $(93\pm 3)\%$. 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 $(93\pm 3)\%$. 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>		
2.10.3.1	<p>Amend the third paragraph of Clause 2.10.3.1 to be:</p> <p>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.</p> <p>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>	The equipment is intended for only used at altitude not exceeding 2 000 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	<p>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) .</p> <p>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.</p>		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

Attachment 2 - National Differences

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
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.	T _{ma} : 40 °C	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.	The equipment is intended for only used at altitude not exceeding 2 000 m.	N/A
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.		P
Annex DD (normative)	Added annex DD: Instructions for the new safety warning labels. DD.1 Altitude warning label  Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor 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. DD.2 Climate warning label  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.	The equipment is intended for only used at altitude not exceeding 2 000 m. The warning wording used. The equipment is intended for only used at not-tropical climate regions. The warning wording used.	N/A
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighu.		P



Attachment 2 - National Differences

Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.		P
Quoting standards and reference documents	<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.</p> <p>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>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



IEC60950_1F - ATTACHMENT

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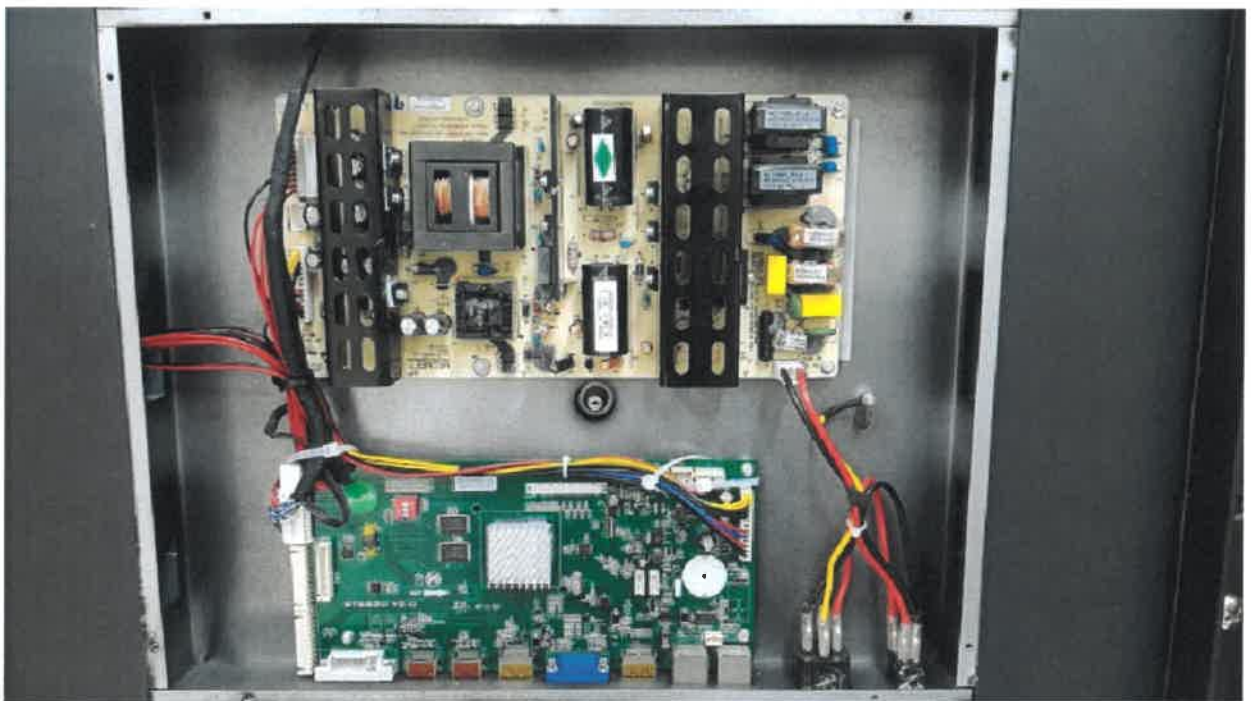


IEC60950_1F - ATTACHMENT

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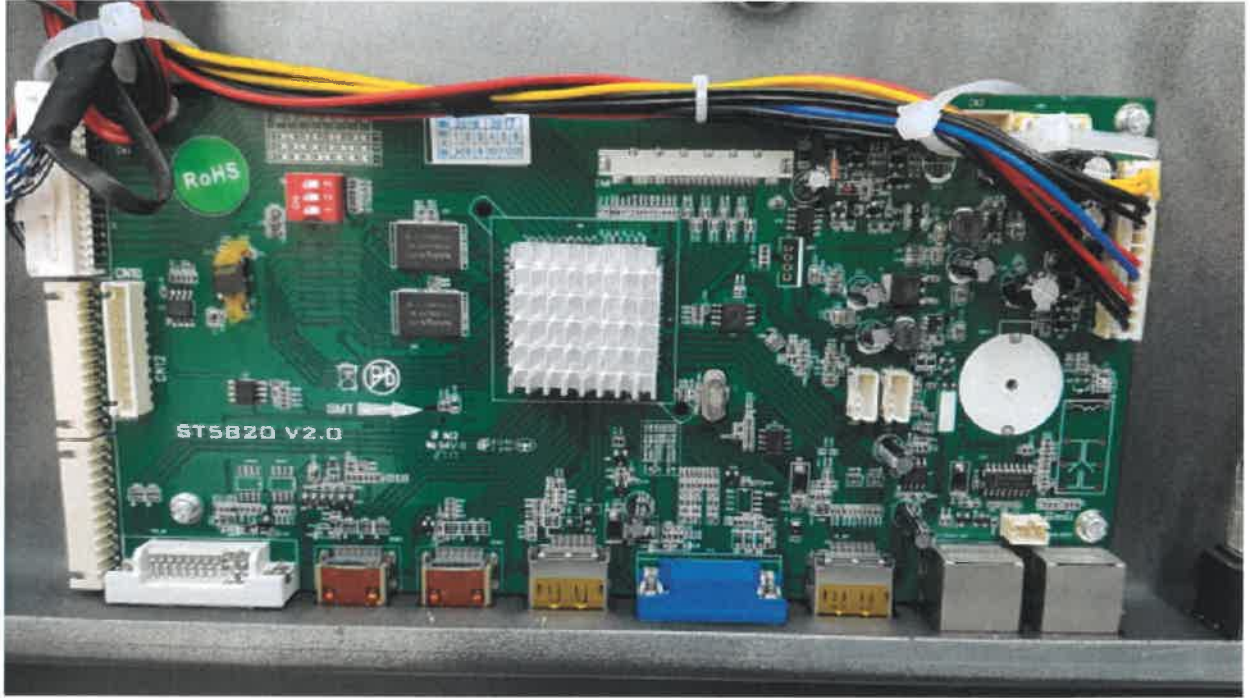


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IEC60950_1F - ATTACHMENT

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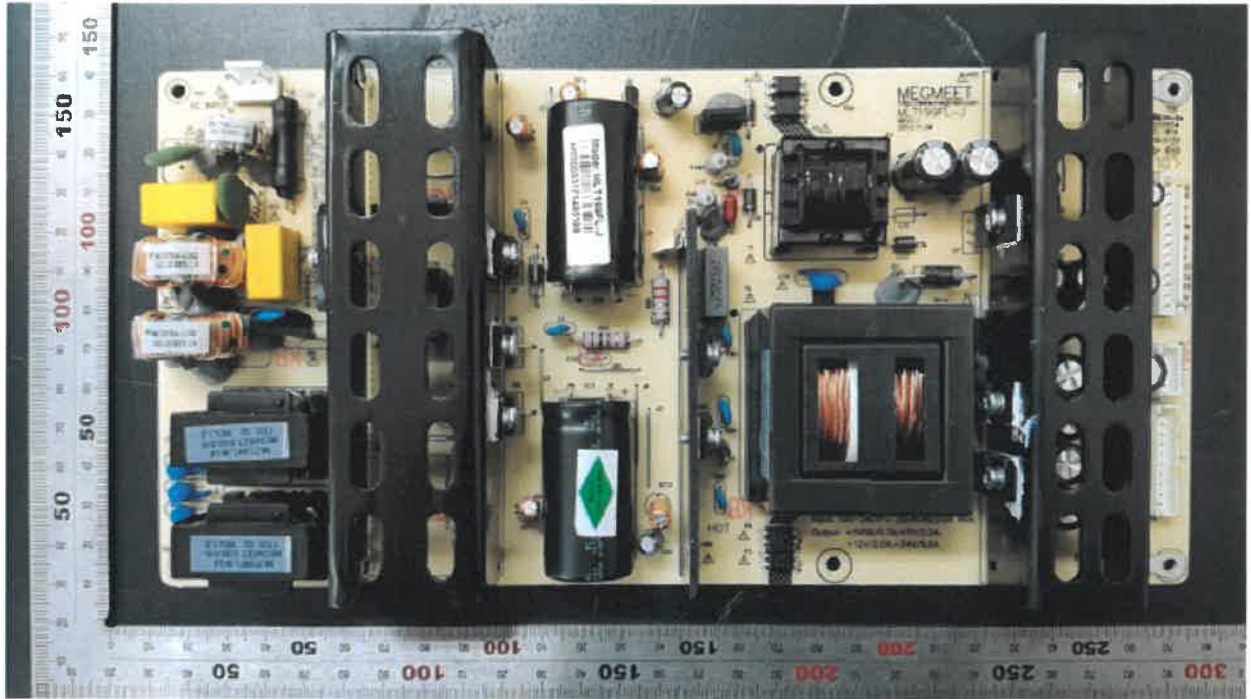


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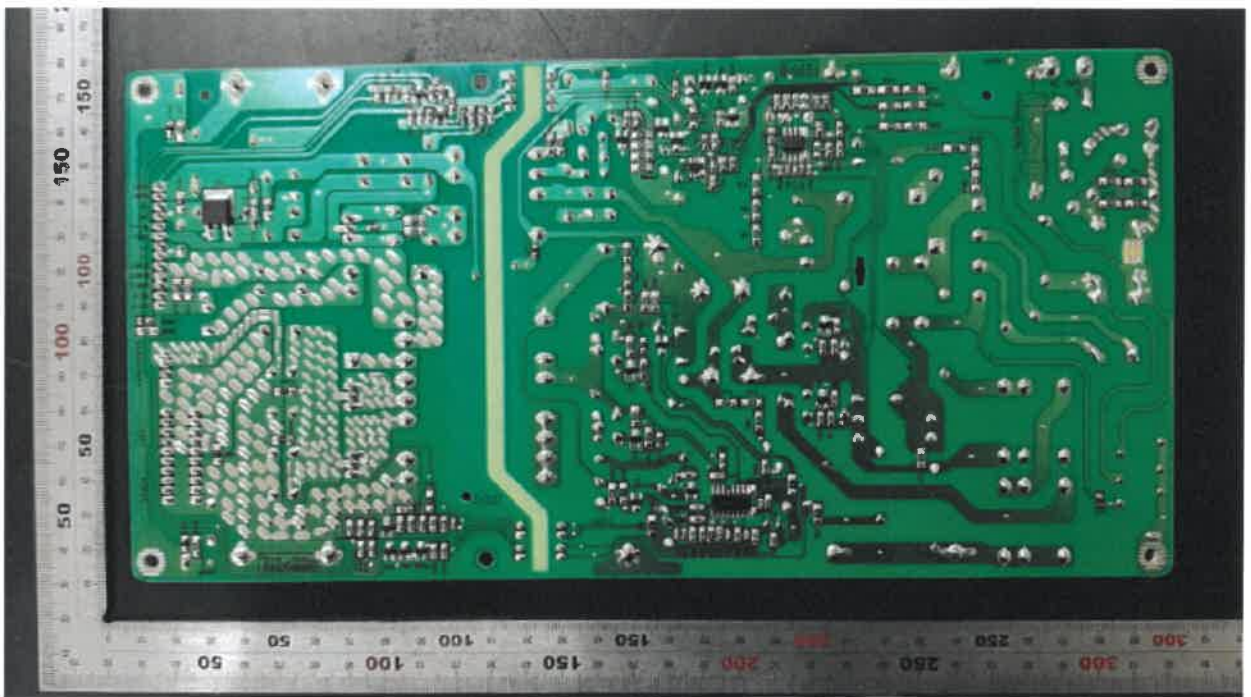


IEC60950_1F - ATTACHMENT

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< AEM-5055UE SMPS Solder/pattern side view >



IEC60950_1F - ATTACHMENT

< AEM-4549UE Front view >

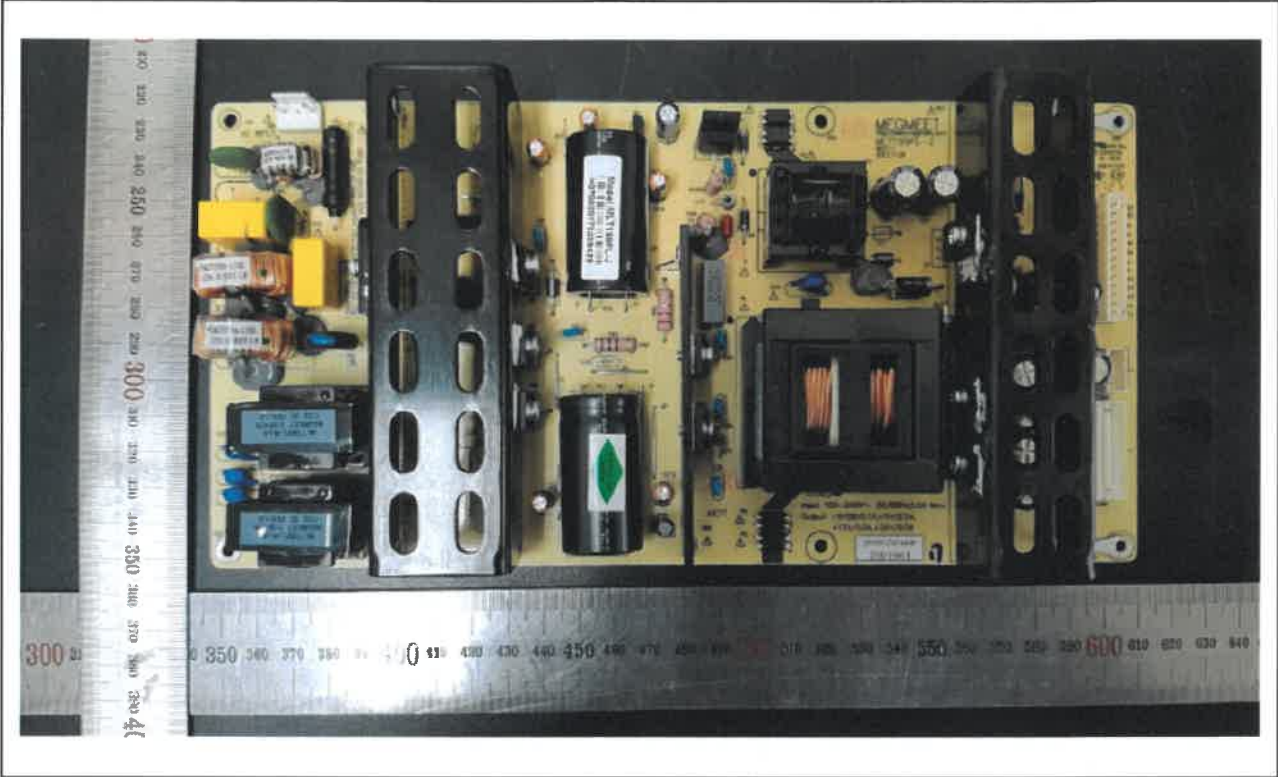


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IEC60950_1F - ATTACHMENT

< AEM-4549UE Components side view >



< AEM-4549UE SMPS Solder/pattern side view >

