TEST REPORT

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

Report Number. .....:	267717
Date of issue.....:	September 4, 2014
Total number of pages.....	Refer to page 4
CB Testing Laboratory..... :	Nemko Shanghai Ltd. Shenzhen Branch Phone: +86 755 8221 0420
Address.....:	Unit C & D, Floor 10, Tower 2, Kefa Road #8 Hi-Technology Park Nanshan District 518057 Shenzhen CHINA
Applicant's name..... :	GlobTek, Inc.
Address.....:	186 Veterans Dr. Northvale, NJ 07647, USA
Manufacturer's name……..:	Same as applicant
Address.....:	
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

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

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

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

Test item description..... :	Switching Power Adapter
Trade Mark .....:	GlobTek, Inc.
Manufacturer.....:	Same as applicant
Model/Type reference.....:	GT-81081-60x-y-a-CC (Refer to page 10 for model designation)
Ratings.....:	AC Input: 1.5A 100-240Vac 50/60Hz DC Output: See page 10 for detail.

Testing procedure and testing location:			
☒	**CB Testing Laboratory**:	Nemko Shanghai Ltd. Shenzhen Branch	
Testing location/ address .....:		Unit C & D, Floor 10, Tower 2, Kefa Road #8 Hi-Technology Park Nanshan District 518057 Shenzhen CHINA	
☐	**Associated CB Laboratory:**		
Testing location/ address .....:			
	Tested by (name + signature).....:	Bill Yang	
	Approved by (name + signature) .....:	Bingo Yang	
☐	Testing procedure: **TMP/CTF Stage 1:**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Approved by (name + signature) .....:		
☐	Testing procedure: **WMT/CTF Stage 2:**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Witnessed by (name + signature)....:		
	Approved by (name + signature) .....:		
☐	Testing procedure: **SMT/CTF Stage 3 or 4:**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Approved by (name + signature) .....:		
	Supervised by (name + signature)...:		

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

1. Main Test report (64 pages)
2. Photos (10 pages)
3. European Group differences and National differences (17 pages)
4. Australian/New Zealand differences (8 pages)
5. Canadian differences (6 pages)
6. Korean differences (1 page)
7. Singapore differences (3 pages)
8. USA differences (5 pages)
9. Chinese differences (8 pages)
10. Japanese differences (8 pages)
11. Israeli differences (4 pages)

Summary of testing:

Tests performed (name of test and test clause):

Clause	Test(s)
1.6	Input Current Test
1.7	Durability of Marking Test
2.1	Access to energized parts
2.1	Energy Hazard in Operator Access Area
2.1	Discharge test
2.2	SELV limits for Normal Conditions
2.4	Limited current test
2.5	Limited power source test
2.6.4.3	Earthing conductors and their terminations
2.9	Humidity Conditioning test
2.10	Working Voltage over Insulation
2.10	Clearance and Creepage distance measurements
2.10	Distance through insulation measurements
4.2	Steady force test 10 N
4.2	Steady force test 30 N
4.2	Steady force test 250 N
4.2	Impact test
4.2	Drop test
4.2	Stress relief test
4.5	Maximum Temperature Test
4.5.5	Ball pressure test
5.1	Touch Current Test
5.2	Electric Strength Test
5.3	Fault Condition Test

Annex C Transformer Construction
Load condition see general product information.

Testing location:

See page 3

1.5, 3.2.5 Power supply cord set	The equipment provides an appliance inlet for connecting to supply mains by detachable supply cord. The cord set was not evaluated in this report and shall comply with the national regulations of the countries in which the equipment to be sold.
1.7.2.1 Language of safety markings/instructions.	Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.
2.5 Limited power source	The model complied with L.P.S test with in the output of the circuit. Refer to sub-clause 2.5 for detail.
2.7.5 Protection by several devices.	The standards require also a protective device in the neutral phase when connected to IT power system. For Norway, this is not required; refer to Lists of Decisions from OSM.
2.7.6 Warning to service personnel.	After operation of the protective device, the equipment is still under voltage if it is connected to an IT power system. A warning is required for service personnel. Norway does not require this warning.

Summary of compliance with National Differences

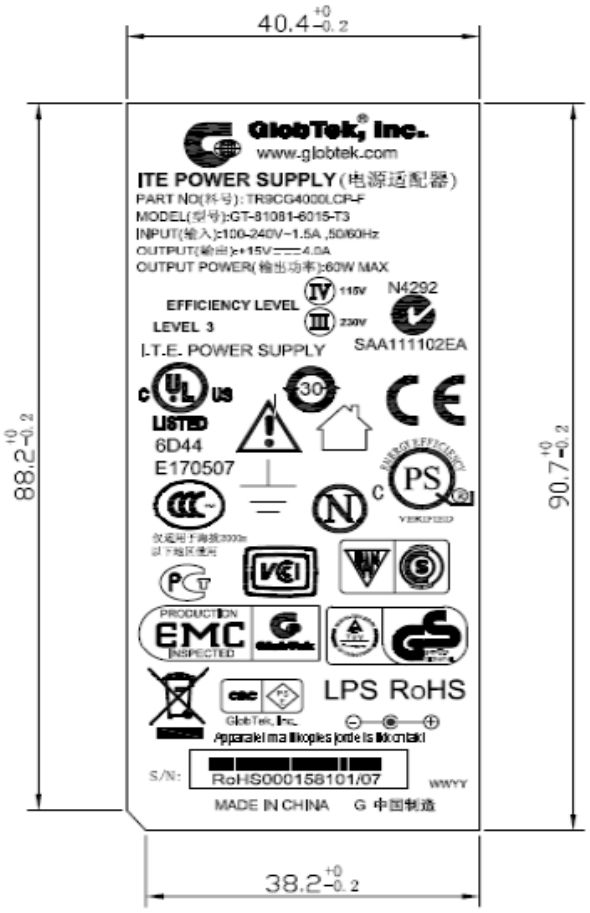
The sample(s) tested compliance with the requirements of IEC 60950-1: 2005 (2nd Edition); Am1: 2009; Am2: 2013 and all CENELEC members as listed in EN 60950-1: 2006 +A11: 2009+A1: 2010+A12: 2011+ A2: 2013.
At the time of issuing this test report, not all countries are listed for IEC 60950-1:2005 (2nd Edition); Am1:2009; Am2:2013. Therefore this test report includes national differences for IEC 60950-1:2005 (2nd Edition); Am1:2009 and IEC 60950-1: 2005 (2nd Edition) and IEC 60950-1: 2001 1st Edition.
All national differences listed in the IECEE Online CB Bulletin are covered by the Common Modifications, Special National Conditions, National Deviations, and the National Requirements noted above except for the countries which are documented in Attachment.
National Differences attached to this test report:
list from IEC 60950-1, 1st edition: Japan.
list from IEC 60950-1, 2nd edition: Australia, China, Singapore and Israeli.
list from IEC 60950-1: 2005 (2nd Edition); Am1: 2009: Korea and Canada
list from IEC 60950-1: 2005 (2nd Edition); Am1: 2009;Am2:2013: USA

Copy of marking plates:

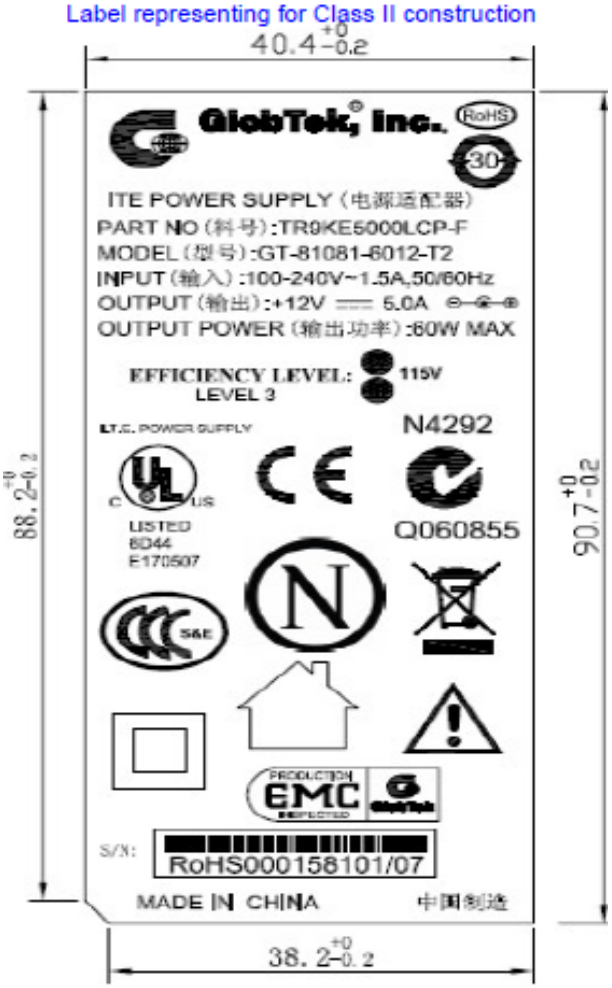
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)

Label representing for Class I construction



Label representing for Class II construction



Calibration:	All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Further information about traceability will be given on request.
Measurement uncertainty:	Measurement uncertainties are calculated for all instruments and instrument set-ups given in this report. Calculations are based on the principles given in the standard EA-4/02 (Dec. 1999), IEC Guide 115:2007, Nemko routine L227 and other relevant internal Nemko-procedures. Further information about measurement uncertainties will be given on request.
Evaluation of results:	If not explicitly stated otherwise in the standard, the test is passed if the measured value is equal to or below (above) the limit line, regardless of the measurement uncertainty. If the measured value is above (below) the limit line, the test is not passed - ref IEC Guide 115:2007, and Nemko routine L220. The instrumentation accuracy is within limits agreed by IECEE-CTL (ref. Nemko routine L227).

Test item particulars :	
Equipment mobility :	[X] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains :	[X] pluggable equipment [X] type A [] type B [] permanent connection [X] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition :	[X] continuous [] rated operating / resting time:
Access location :	[X] operator accessible [] restricted access location
Over voltage category (OVC) :	[] OVC I [X] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values :	+10% / -10%
Tested for IT power systems :	[X] Yes [] No
IT testing, phase-phase voltage (V) :	230
Class of equipment :	[X] Class I [X] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) :	16A (20A for Canada and US)
Pollution degree (PD) :	[] PD 1 [X] PD 2 [] PD 3
IP protection class :	IP20
Altitude during operation (m) :	< 2000m:
Altitude of test laboratory (m) :	< 2000m:
Mass of equipment (kg) :	0.271kg Dimension (W x H x D): 55 x 32 x118mm (excluding the output wires and connector)
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 :	2014-08-26
Date(s) of performance of tests :	2014-08-27

General remarks:

”(see attachment #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

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

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

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

☒ Yes

☐ Not applicable

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

Name and address of factory (ies) ..... :

GlobTek (Suzhou) Co., Ltd
Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China

GlobTek, Inc.
186 Veterans Dr. Northvale, NJ 07647 USA

General product information:

The equipment is a series of class I or class II external type switching mode power supply adaptors (desk top type with appliance inlet) for DC supply of information technology equipment.

Models of Class I are identical with Class II except 3 pin AC inlet and the earthing wire (green/yellow wire) between AC inlet (not located on trace) to secondary output V-. Also, Class I construction have CY1 and CY2 between lines and earthing.

Top enclosure of the adapter is secured to the bottom enclosure by ultrasonic welding and with min.V-1 flammability rating.

Explanation of model designation GT-81081-60x-y-a-CC:

"x" is the rated standard output voltage designation, which can be 12, 14, 15, 18, 19, 20, 22 or 24; "y" is minor adjusting variable to standard output voltage, which can be 0.1 - 2.9 in step of 0.1 or blank; "a" represents the inlet type, which can be T2 or T3 or T3A; T2 represents C8 inlet type (Class II construction) , T3 represents C14 inlet type(Class I construction), T3A represents C6 inlet type(Class I construction); Combination "x" and "y" :

x	12	14	15	18	19	20	22	24
y	blank	blank or 0.1-1.9	blank or 0.1-0.9	blank or 0.1-2.9	blank or 0.1-0.9	blank or 0.1-0.9	blank or 0.1-1.9	blank or 0.1-1.9

"-CC" is optional, the model name with suffix "-CC" means it has different control method of secondary voltage. The model GT-81081-60x-y-a is similar to GT-81081-60x-y-a-CC except the model number and the secondary voltage control method, the GT-81081-60x-y-a used U3, C17, R35 and D6 in secondary circuit to control the secondary voltage, and GT-81081-60x-y-a-CC used U2-A, U2-B, C13, C14, C15, C16, R27, R28, R29, R30, R32, R33 and R34 in secondary circuit to control the secondary voltage.

Model list:

Model	Output Voltage (Vdc)	Max output power (W)
GT-81081-6012-a,GT-81081-6012-a-CC	12.0	60
GT-81081-6014-y-a,GT-81081-6014-y-a-CC	12.1-13.9	60
GT-81081-6014-a, GT-81081-6014-a-CC	14.0	60
GT-81081-6015-y-a,GT-81081-6015-y-a-CC	14.1-14.9	60
GT-81081-6015-a, GT-81081-6015-a-CC	15.0	60
GT-81081-6018-y-a,GT-81081-6018-y-a-CC	15.1-17.9	60
GT-81081-6018-a, GT-81081-6018-a-CC	18.0	60
GT-81081-6019-y-a,GT-81081-6019-y-a-CC	18.1-18.9	60
GT-81081-6019-a, GT-81081-6019-a-CC	19.0	60
GT-81081-6020-y-a,GT-81081-6020-y-a-CC	19.1-19.9	60
GT-81081-6020-a, GT-81081-6020-a-CC	20.0	60
GT-81081-6022-y-a,GT-81081-6022-y-a-CC	20.1-21.9	60
GT-81081-6022-a, GT-81081-6022-a-CC	22.0	60
GT-81081-6024-y-a,GT-81081-6024-y-a-CC	22.1-23.9	60
GT-81081-6024-a, GT-81081-6024-a-CC	24.0	60

Difference between models:
1. Transformer: The adapters with different output voltage have different secondary winding of transformer.
2. R3, R4, R26, R18, R20, C10 and C11: The parameters of these components depend on output power and output voltage.
3. C1, R19, R19A, D5, C9, C10 and C11: The parameters of these components depend on output voltage

The models GT-81081-6012-T3A, GT-81081-6012-T3A-CC, GT-81081-6024-T3A and GT-81081-6024-T3A-CC are representing the worst case because the models had highest V, A, VA and control method of secondary voltage. Unless otherwise specified, all test were conducted under worst case.

Max. normal load condition: Output load to rated output.

Max. recommended operating ambient (Tma): 40°C

Circuit characteristics: The equipment contains primary circuit, LCC circuit and SELV circuit in secondary.

1.1.2 - Additional requirements:
Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:
This equipment is intended to operate in a "normal" environment (Offices and homes).

Electromedical equipment connected to the patient:
This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:
This equipment is intended to operate in a "normal" environment (Offices and homes) .

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**		—
1.5	**Components**		
1.5.1	General	Refer to below.	P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	Transformer used are suitable for their intended applications and comply with relevant parts of this standard and particularly Annex C, see Annex C – Transformers.	P
1.5.5	Interconnecting cables	Interconnection output cables are carrying only SELV voltages. Except for the insulation material, there are no further requirements to the output cables.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.6	Capacitors bridging insulation	For Class I construction:CX1 and CX2 capacitors are used between lines, CY1 and CY2 capactiors are used between line and earth. For Class II construction : CX1 and CX2 capacitors are used between lines. X2, Y1 and Y2 capacitors are certified according to IEC/EN60384-14. Y1(CY3) capacitor used for bridging reinforced insulation.Refer to appended table 1.5.1	P
1.5.7	Resistors bridging insulation	Refer below:	—
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Discharge resistors are located after fuse bridging functional insulation.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No resistors bridging double or reinforced insulation between a.c mains and other circuits.	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No 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	For Class I construction: Considerred for Norway. X2,Y1 and Y2 capacitors certified according to IEC/EN 60384-14.	N/A
1.5.9	Surge suppressors	See below.	—
1.5.9.1	General	See below.	—
1.5.9.2	Protection of VDRs	See below.	—
1.5.9.3	Bridging of functional insulation by a VDR	Certified VDR (MOV1) connected between line and neutral, located after fuse F1 ref. list of critical components and Annex Q.	P
1.5.9.4	Bridging of basic insulation by a VDR	No such parts.	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such parts.	N/A
1.6	**Power interface**		
1.6.1	AC power distribution systems	TN, and IT for Norway.	—
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.4	Neutral conductor	Neutral is insulated from earth and body throughout the equipment and components rated accordingly.	P
1.7	**Marking and instructions**		
1.7.1	Power rating and identification markings	The required marking is located on the outside surface of the equipment.	P
1.7.1.1	Power rating marking	See below	P
	Multiple mains supply connections.....:	Only one mains supply connections.	N/A
	Rated voltage(s) or voltage range(s) (V) .....:	100-240V~	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) ....:	50/60Hz	—
	Rated current (mA or A) .....:	1.5A	—
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark .....:	GlobTek, Inc.	P
	Model identification or type reference .....:	GT-81081-60x-y-a-CC	P
	Symbol for Class II equipment only .....:	For Class II construction:Class II symbol (IEC 60417-1, symbol No. 5172) is applied to the label.	P
	Other markings and symbols .....:	The additional marking does not give rise to misunderstandings.	P
1.7.2	Safety instructions and marking	Sufficient information provided	P
1.7.2.1	General	Considered.	—
1.7.2.2	Disconnect devices	The equipment is provided with an appliance inlet.	P
1.7.2.3	Overcurrent protective device	Pluggable equipment Type A.	N/A
1.7.2.4	IT power distribution systems	The following or similar information should be given in the installation instruction: "This product is also designed for IT power distribution system with phase-to-phase voltage 230V".	—
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.6	Ozone	The equipment does not produce Ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment .....:	No supply voltage adjustment.	N/A
	Methods and means of adjustment; reference to installation instructions .....:		N/A
1.7.5	Power outlets on the equipment .....:	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:	Non-replaceable PCB-mount fuse: F1: T3.15A, 250Vac	P
1.7.7	Wiring terminals	Refer below.	—
1.7.7.1	Protective earthing and bonding terminals .....:	For class I construction: appliance inlet used.	P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment is not permanently connected or provided with a non-detachable power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	The equipment is not supplied from d.c. mains.	N/A
1.7.8	Controls and indicators	Refer below.	P
1.7.8.1	Identification, location and marking .....:	The function of controls affecting safety is obvious without knowledge if language etc.	P
1.7.8.2	Colours .....:	Green LED for normal operation.	P
1.7.8.3	Symbols according to IEC 60417 .....:	There are no switches in the equipment.	N/A
1.7.8.4	Markings using figures .....:	No controls.	N/A
1.7.9	Isolation of multiple power sources .....:	Only one connection supplying hazardous voltages and energy levels to the equipment.	N/A
1.7.10	Thermostats and other regulating devices .....:	No thermostats or other regulating devices.	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No marking is placed on removable parts.	N/A
1.7.13	Replaceable batteries .....:	No replaceable batteries in the equipment.	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations.....:	Equipment not intended for installation in RAL.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2	**PROTECTION FROM HAZARDS**		
2.1	Protection from electric shock and energy hazards		—
2.1.1	Protection in operator access areas	Refer below:	—
2.1.1.1	Access to energized parts	There is adequate protection against operator contact with bare parts at ELV or hazardous voltage or parts separated from these with basic or functional insulation only (except protective earth), also after operator detachable parts are removed and doors and covers are opened. No hazardous voltages exceeding 1000V a.c. or 1500V d.c. Checked by test finger and test pin.	P
	Test by inspection .....:	Complies.	P
	Test with test finger (Figure 2A) .....:	Complies.	P
	Test with test pin (Figure 2B) .....:	Complies.	P
	Test with test probe (Figure 2C) .....:	No TNV circuit in the equipment.	N/A
2.1.1.2	Battery compartments	No TNV circuits in the equipment.	N/A
2.1.1.3	Access to ELV wiring	No internal wiring at ELV accessible to the operator.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.5	Energy hazards ..... :	(See appended table 2.1.1.5)	—
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment	The capacitance of the input circuit is > 0.1µF. The measurements were performed in worst case condition with regard to the fuse.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured voltage (V); time-constant (s) ..... :	Max. Time constant measured under normal operating is: 756ms, measuring without load condition. (Vin=264V) Vp=359.2Vac, 37% of Vp =132.9Vac. The max. rated value for Xcapacitor and Bleeder resistor are used. See Table 1.5.1.	–
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 amplifier.	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 RAL.	N/A
2.2	**SELV circuits**		
2.2.1	General requirements	SELV limits are not exceeded under normal condition and after a single fault.	P
2.2.2	Voltages under normal conditions (V) ..... :	Within SELV limits. (see appended table 2.2)	P
2.2.3	Voltages under fault conditions (V) ..... :	Within SELV limits. (see appended table 2.2)	P
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits are only connected to other SELV circuits.	P
2.3	**TNV circuits**		
2.3.1	Limits	No TNV circuits.	N/A
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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**		
2.4.1	General requirements	The pins of the output connector are accessible to the user and connected to the primary circuit by bridging component CY3. Therefore, the circuit for the output pins must be designed as a limited current circuit. (Refer to table 2.4)	P
2.4.2	Limit values	(Refer to the table 2.4)	P
	Frequency (Hz).....:		—
	Measured current (mA) .....:		—
	Measured voltage (V) .....:		—
	Measured circuit capacitance (nF or µF).....:	The measured charge is <45µC No parts exceeding 15kV peak or d.c.	—
2.4.3	Connection of limited current circuits to other circuits	Under normal operating condition, no fault condition can cause higher current.	P
2.5	**Limited power sources**		
	a) Inherently limited output	Considered	P
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition	Outputs limited to LPS by regulating network. (see appended table 2.5)	P
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output	(see appended table 2.5)	—
	Max. output voltage (V), max. output current (A), max. apparent power (VA) ..... :		—
	Current rating of overcurrent protective device (A) .:		N/A
2.6	**Provisions for earthing and bonding**		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.1	Protective earthing	The evaluation of Cl.2.6 is only for Class I equipment as below. Accessible conductive parts are reliably connected to protective earth.	P
2.6.2	Functional earthing	Functional earthing of secondary circuits separated from primary circuit by reinforced insulation.	P
2.6.3	Protective earthing and protective bonding conductors	Refer to below.	P
2.6.3.1	General	See below.	P
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG :		—
2.6.3.3	Size of protective bonding conductors	Refer to 2.6.3.4.	N/A
	Rated current (A), cross-sectional area (mm^2), AWG :		—
	Protective current rating (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) ..... :	From the earth pin of inlet to copper sheet:7mΩ (40A/2min)	P
2.6.3.5	Colour of insulation..... :	Green/yellow wire used.	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals	Appliance inlet provided.	P
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Appliance inlet provided.	P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment	Interconnection to other devices by secondary output cable only.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective devices in the protective earthing / bonding conductors.	P
2.6.5.3	Disconnection of protective earth	It is impossible to disconnect protective earth without disconnecting mains.	P
2.6.5.4	Parts that can be removed by an operator	No operator removable parts with protective earth connection except certified power supply cord.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.5	Parts removed during servicing	Protective earthed parts can not be removed in a way which would impair safety.	P
2.6.5.6	Corrosion resistance	Grounding system parts are reliably plated or coated and are not subject to significant electrochemical corrosion.	P
2.6.5.7	Screws for protective bonding	Not used.	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	No TNV circuit.	N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		
2.7.1	Basic requirements	Protective device is integrated in the equipment, see also Sub-clause 5.3.	P
	Instructions when protection relies on building installation	Protective device is integrated in the equipment.	P
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection	Adequate protective device.	P
2.7.4	Number and location of protective devices ..... :	In Norway, IT power distribution system is used. Equipment with a single protective device is accepted in Norway. Other countries (e.g. Germany and Belgium) may have additional requirements.	P
2.7.5	Protection by several devices	Only one protective device. See Sub-clause 2.7.4.	N/A
2.7.6	Warning to service personnel..... :	After operation of the protective device, the equipment is still under voltage if it is connected to an IT-power distribution system. A warning is required for service persons. Norway does not require this warning. See also Sub-clause 2.7.4.	N/A
2.8	**Safety interlocks**		
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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. No driving belts or couplings used.	P
2.9.2	Humidity conditioning	Humidity treatment performed for 120 hrs.	P
	Relative humidity (%), temperature (°C) ..... :	93%, 40°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	See below	P
	Method(s) used ..... :	Method 1 is used.	—
2.10	**Clearances, creepage distances and distances through insulation**		
2.10.1	General	See below.	P
2.10.1.1	Frequency .....:	Considered.	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.	—
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	The circuit will not generate starting pulse.	N/A
2.10.2	Determination of working voltage	(see appended table 2.10.2)	P
2.10.2.1	General	Refer 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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General	Refer below:	—
2.10.3.2	Mains transient voltages	2500V	—
	a) AC mains supply .....:	240V	—
	b) Earthed d.c. mains supplies .....:		N/A
	c) Unearthed d.c. mains supplies .....:		N/A
	d) Battery operation .....:		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	Only the functional insulation in secondary circuits complied with clause 5.3.4.	N/A
2.10.3.5	Clearances in circuits having starting pulses	The circuit will not generate starting pulse.	N/A
2.10.3.6	Transients from a.c. mains supply .....:	Considered.	P
2.10.3.7	Transients from d.c. mains supply .....:	Not connected to 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	See below.	—
	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 networks.	N/A
2.10.4	Creepage distances	See below.	—
2.10.4.1	General	Considered.	—
2.10.4.2	Material group and comparative tracking index	See below.	—
	CTI tests .....:	Material group IIIb is used.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	See below.	—
2.10.5.1	General	Considered.	—
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No such construction used.	N/A
2.10.5.4	Semiconductor devices	No semiconductor devices.	N/A
2.10.5.5	Cemented joints	The optocopler applied a). See appended table 1.5.1.	P
2.10.5.6	Thin sheet material – General	Considered.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.7	Separable thin sheet material	(see appended table 2.10.5 and Annex C)	P
	Number of layers (pcs) .....:		—
2.10.5.8	Non-separable thin sheet material	Not used.	N/A
2.10.5.9	Thin sheet material – standard test procedure	Not used.	N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 2.10.5 and Annex C)	P
	Electric strength test	(see appended table 2.10.5 and Annex C)	—
2.10.5.11	Insulation in wound components	Not used insulation in wound components.	N/A
2.10.5.12	Wire in wound components	Triple insulated wire in sec. winding of T1. T1 complies with Annex U.	P
	Working voltage .....:	(see appended table 2.10.2)	P
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplementary, reinforced insulation .....:		N/A
	c) Compliance with Annex U .....:	(see appended table 1.5.1)	P
	Two wires in contact inside wound component; angle between 45° and 90° .....:	The triple insulated wires are not crossing another wire in an angel between 45°and 90° prevented by tube.	P
2.10.5.13	Wire with solvent-based enamel in wound components	No wire with solvent-based enamel in wound components.	N/A
	Electric strength test		N/A
	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	See below.	—
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	No special coating in order to reduce distances.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	No such parts.	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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.7	Component external terminations	Coatings not used over terminations to increase effective creepage and clearance distances.	N/A
2.10.8	Tests on coated printed boards and coated components	No special coating in order to reduce distance.	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	For optocouplers, see appended table 1.5.1.	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	For optocouplers, see appended table 1.5.1.	P
2.10.11	Tests for semiconductor devices and cemented joints	For optocouplers, see appended table 1.5.1.	P
2.10.12	Enclosed and sealed parts	For optocouplers, see appended table 1.5.1.	P
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Internal wires are UL recognized wiring which is PVC insulated, rated VW-1. Internal wiring gauge is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors	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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.6	Screws for electrical contact pressure	No screw for electrical contact.	N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws	No screw used.	N/A
3.1.9	Termination of conductors	Terminations cannot become displaced so that clearances and creepage distances can be reduced.	P
	10 N pull test		P
3.1.10	Sleeving on wiring	Sleevings on wiring reliable kept in position by cable ties or by the use of heatshrunk sleeving	P
3.2	**Connection to a mains supply**		
3.2.1	Means of connection	Refer below:	—
3.2.1.1	Connection to an a.c. mains supply	The equipment is provided with an appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply	The equipment is not for 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	The appliance inlet complies with IEC 60320 and is properly placed to avoid hazards after insertion of the appliance coupler.	P
3.2.5	Power supply cords	Not provided.	—
3.2.5.1	AC power supply cords		N/A
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords	The equipment is not for connecting to d.c. mains.	N/A
3.2.6	Cord anchorages and strain relief	Equipment provided with an appliance inlet.	N/A
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.7	Protection against mechanical damage	No sharp points or cutting edges on the equipment surfaces.	P
3.2.8	Cord guards	The equipment is neither hand- held nor intended to be moved during operation.	N/A
	Diameter or minor dimension D (mm); test mass (g) :		—
	Radius of curvature of cord (mm)..... :		—
3.2.9	Supply wiring space	Equipment provided with an appliance inlet.	P
3.3	**Wiring terminals for connection of external conductors**		
3.3.1	Wiring terminals	Equipment provided with an appliance inlet.	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 (mm2) :		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		
3.4.1	General requirement	See Sub-clause 3.4.2.	P
3.4.2	Disconnect devices	The appliance coupler will be acting as disconnect device.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No parts remain energized after the disconnect device.	N/A
3.4.5	Switches in flexible cords	No isolating switch in the cord set.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	N/A
3.4.8	Switches as disconnect devices	No switches provided.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.9	Plugs as disconnect devices	The appliance coupler is regarded as disconnect device, no warning is required.	N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	N/A
3.4.11	Multiple power sources	One power source only.	N/A
3.5	**Interconnection of equipment**		
3.5.1	General requirements	Considered.	—
3.5.2	Types of interconnection circuits ..... :	SELV and LCC circuit.	P
3.5.3	ELV circuits as interconnection circuits	No ELV.	N/A
3.5.4	Data ports for additional equipment	No data ports	P
4	**PHYSICAL REQUIREMENTS**		
4.1	Stability		N/A
	Angle of 10°	Mass < 7kg.	N/A
	Test force (N) .....:	The unit is not floor-standing.	N/A
4.2	**Mechanical strength**		
4.2.1	General	Complies with the requirement also after tests described below are applied.	P
	Rack-mounted equipment.	Not rack-mounted equipment.	N/A
4.2.2	Steady force test, 10 N	No hazard, ref. comment in appended table 2.10.3 and 2.10.4	P
4.2.3	Steady force test, 30 N	The components applied	P
4.2.4	Steady force test, 250 N	No hazard. The test is performed at enclosure.	P
4.2.5	Impact test	Comply with requirement.	P
	Fall test	No hazard as result from the steel sphere fall test	P
	Swing test	No hazard as result from the steel sphere Swing test	P
4.2.6	Drop test; height (mm) .....:	No hazard as result from the drop test at 1000mm height.	N/A
4.2.7	Stress relief test	Test is carried out at 87°C / 7hrs. No risk of shrinkage or distortion on enclosures due to release of internal stresses.	P
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N/A
	Picture tube separately certified .....:		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .....:	No wall or ceiling mounted equipment.	N/A
4.3	**Design and construction**		
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N)..... :	No knobs, grips, handles, lever etc.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A
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	SELV connectors do not comply with IEC 60320 or IEC 60083.	P
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard :		N/A
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	No batteries in the equipment.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not produce dust or using powder, liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids .....:	The equipment does not contain flammable liquid.	N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation	Refer below:	—
4.3.13.1	General	Refer below:	—
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The equipment does not produce significant UV radiation.	N/A
	Part, property, retention after test, flammability classification .....:		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:	The equipment does not produce significant UV radiation.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	No Laser product used.	N/A
4.3.13.5.1	Lasers (including laser diodes)	No laser.	N/A
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)	defuse LEDs used only	N/A
4.3.13.6	Other types .....:	The equipment does not generate other types of radiation.	N/A

4.4	**Protection against hazardous moving parts**		
4.4.1	General	There is no moving parts.	N/A
4.4.2	Protection in operator access areas ..... :		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a).....:		N/A
	Is considered to cause pain, not injury. b) .....:		N/A
	Considered to cause injury. c) .....:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning .....:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning .....:		N/A

4.5	**Thermal requirements**	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.1	General	See below.	P
4.5.2	Temperature tests	(see appended table 4.5)	—
	Normal load condition per Annex L ..... :		P
4.5.3	Temperature limits for materials	(see appended table 4.5)	—
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	(see appended table 4.5.5)	P
4.6	**Openings in enclosures**		
4.6.1	Top and side openings	No opening in the equipment.	P
	Dimensions (mm) ..... :		—
4.6.2	Bottoms of fire enclosures	No opening in the equipment.	P
	Construction of the bottom, dimensions (mm) .... :		—
4.6.3	Doors or covers in fire enclosures	No doors or covers in fire enclosure.	N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ..... :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No barrier secured by adhesive inside enclosure.	N/A
	Conditioning temperature (°C), time (weeks)..... :		—
4.7	**Resistance to fire**		
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 is used.	P
	Method 1, selection and application of components wiring and materials	(see appended table 1.5.1)	P
	Method 2, application of all of simulated fault condition tests	Not used method 2.	N/A
4.7.2	Conditions for a fire enclosure	Refer below.	—
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	The fire enclosure is required to cover all parts.	N/A
4.7.3	Materials		P
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.2	Materials for fire enclosures	The fire enclosure is V-0 material.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	No parts outside the fire enclosure.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-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 parts exceeding 4kV.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		
5.1	**Touch current and protective conductor current**		P
5.1.1	General	Test conducted in accordance with 5.1.2 to 5.1.7.	P
5.1.2	Configuration of equipment under test (EUT)	See below.	—
5.1.2.1	Single connection to an a.c. mains supply	No interconnection of equipment.	N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.3	Test circuit	Tested for connection to IT power distribution system (also relevant for TN or TT power distribution system).	P
5.1.4	Application of measuring instrument	Measuring instrument D1 is used.	P
5.1.5	Test procedure	Considered.	—
5.1.6	Test measurements	See below	—
	Supply voltage (V) .....:	264V	—
	Measured touch current (mA) .....:	(see appended table 5.1)	—
	Max. allowed touch current (mA) .....:	(see appended table 5.1)	—
	Measured protective conductor current (mA) .....:		—
	Max. allowed protective conductor current (mA)...:		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General .....:	See below	—
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 nor a cable distribution system.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports .....:		—
	b) EUT whose telecommunication ports have no reference to protective earth		—
5.2	**Electric strength**		
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P
5.3	**Abnormal operating and fault conditions**		
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	There is no motor in the equipment.	N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation.....:	Complies with a) and c).	P
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N/A
5.3.6	Audio amplifiers in ITE .....:	No audio amplifier in 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	See below.	P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P
5.3.9.2	After the tests	No reduction of clearance and creepage distances. Electric strength test is made on functional and reinforced insulation.	P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		—
6.1.1	Protection from hazardous voltages		—
6.1.2	Separation of the telecommunication network from earth		—
6.1.2.1	Requirements	No TNV circuit.	N/A
	Supply voltage (V) .....:		
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		
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 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)	Not used.	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
A.3.3	Compliance criterion		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements	No such parts	N/A
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....:		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....:		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) .....:		—

C	**Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		P
	Position .....:	Primary to SELV	—
	Manufacturer .....:	(see appended table 1.5.1)	—
	Type .....:	(see appended table 1.5.1)	—
	Rated values .....:	(see appended table 1.5.1)	—
	Method of protection..... :	Inherent protection	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended table 5.2)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protection from displacement of windings..... :	(see appended table C.2)	P
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		
D.1	Measuring instrument	Figure D.1 used.	P
D.2	Alternative measuring instrument	Measuring instrument D1 is used.	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**		
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply .....:		N/A
G.2.2	Earthed d.c. mains supplies .....:		N/A
G.2.3	Unearthed d.c. mains supplies .....:		N/A
G.2.4	Battery operation .....:		N/A
G.3	Determination of telecommunication network transient voltage (V) .....:		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks .....:		N/A
G.4.2	Transients from telecommunication networks .....:		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances .....:		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A

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

J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		P
	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	Not used.	N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....:		N/A

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

N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

P	**ANNEX P, NORMATIVE REFERENCES**		—

Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		P
	- Preferred climatic categories .....:	Certified VDR used. (see appended table 1.5.1)	P
	- Maximum continuous voltage .....:	Certified VDR used. (see appended table 1.5.1)	P
	- Combination pulse current .....:	Certified VDR used. (see appended table 1.5.1)	P
	Body of the VDR Test according to IEC60695-11-5.....:		P
	Body of the VDR. Flammability class of material (min V-1).....:		P

R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—

U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.12)**		P
		See table 1.5.1	—

V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		
V.1	Introduction	Considered.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
V.2	TN power distribution systems	Considered.	P
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		
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)**		
X.1	Determination of maximum input current	Considered.	P
X.2	Overload test procedure		P
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		
Y.1	Test apparatus ..... :		N/A
Y.2	Mounting of test samples ..... :		N/A
Y.3	Carbon-arc light-exposure apparatus ..... :		N/A
Y.4	Xenon-arc light exposure apparatus ..... :		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		N/A
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		—
CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		
CC.1	General		N/A
CC.2	Test program 1……..:		N/A
CC.3	Test program 2……..:		N/A
CC.4	Test program 3.....:		
CC.5	Compliance.....:		
DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		
DD.1	General		N/A

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

1.5.1	TABLE: List of critical components	P

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Appliance inlet (for GT-8108160x-y-T3-CC)	Richbay	R-301	Min. 250Vac; Min. 10A	IEC60320-1, UL 498	VDE, UL
	Sun Fair	S-03 series			VDE, UL
	TECX	TU-301, TU-301-SP			VDE, UL
	Leci	DB-14			VDE, UL
	Inalways Corporation	0711			VDE, UL
Appliance inlet (for GT-8108160x-y-T3A-CC)	TECX	TU-333	Min. 250Vac; Min. 2.5A	IEC60320-1, UL 498	VDE, UL
	Sun Fair	S-02			VDE, UL
	Leci	DB-6			VDE, UL
	Richbay	R-30790			VDE, UL
	Inalways Corporation	0724			VDE, UL
Appliance inlet (for GT-8108160x-y-T2-CC)	Tecx-unions	SO-222	Min. 250V; Min. 2.5A	IEC60320-1, UL 498	VDE, UL
	Sun Fair	S-01			VDE, UL
	Rich Bay	R-201SN90			VDE, UL
	LECI	DB-8			VDE, UL
	Inalways Corporation	0721			VDE, UL
Enclosure	SABIC	SE100, SE100X, SE1, SE1X, HF500R CX7211 C2950 EXCY0098	Min. 2.0mm thick, flame class V-0 or better	UL 94	UL
	Teijin	LN-1250P, LN-1250G			UL
	ChiMei	PA-765A PC-540			UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL796	UL

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Fuse (F1)	Conquer	MST	T3.15A, 250V	IEC 60127 UL 248	VDE, UL
	Ever Island Electric Co Ltd & Walter Electric	2010			VDE, UL
	Walter	ICP			VDE, UL
	Das & Sons	385T			VDE, UL
	Bel	RST			VDE, UL
	Cooper Bussmann	SS-5			VDE, UL
	Save Fusetech	SS-5			VDE, UL
	Zhongshan Lanbao Electrical	RTI-10			VDE, UL
	Sunny East	CFD			VDE, UL
	Lanson	SMT			VDE, UL
	Conquer	MET			VDE, UL
NTC thermistor(TR 1)	Interchangeable	Interchangeable	5Ω at 25°C, after fuse	IEC 60950-1	Test in equipment
Varistor, (VR1) (optional) *)	TKS	TVR10471K, TVR14471K	Max. Continuous voltage: min 300Vac(rms), 85°C The coating is V-0	IEC 61051-2 IEC 60950-1 Annex Q UL 1449	VDE ,UL
	Centra	10D471K, 14D471K			VDE ,UL
	JOYIN	10N471K, 14N471K			VDE ,UL
	Success Electronics Co Ltd	SVR10D471K SVR14D471K			VDE ,UL
	Walsin	VZ14D471K			VDE ,UL
	Lien Shun Electronics Co., Ltd.	14D471K			VDE ,UL
	CERAMATE	GNR10D471K GNR14D471K			VDE ,UL
	Brightking	14D471K 10D471K			VDE ,UL

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
X2 cap (CX1,CX2)	CT	CTX	CX1=Max. 0.47uF, CX2=Max.0.15 uF min. 250 Vac Min X2 ,T100	IEC 60384-14, UL 60384-14	VDE
	UTX	HQX			VDE, UL
	Tenta	MEX			VDE, UL
	Dain	MPX, NPX			VDE, UL
	Jinghao	CBB62B			VDE, UL
	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	MPX			VDE, UL
	YUON YU ELECTRONICS CO LTD	MPX			VDE, UL
	Sinhua Electronics (Shanghai) Co. Ltd.	MPX			VDE, UL
Resistor Between L/N, after fuse (R1A,R1B,R1C)	Interchangeable	Interchangeable	Max.470K Ω	IEC 60950-1	Test in equipment
Bridging diode(BD1)	Interchangeable	Interchangeable	Min 1A, min 400V	IEC 60950-1	Test in equipment
E-Capacitor (C1)	Interchangeable	Interchangeable	Max.120uF; Min.400V 105°C	IEC 60950-1	Test in equipment
Transistor (Q1)	Interchangeable	Interchangeable	Min 6A Min.600V	IEC 60950-1	Test in equipment
Insulation tape, for heat sink	3M	1350F-1, 1350T-1, 44 1350-1	130°C	UL 510	UL
	Bondtec	370S			UL
	YAHUA	PZ series CT series			UL
	SYMBIO INC	35660Y			UL
	JINGJIANG JINGYI	JY25-A			UL
	Liang Yi	LY-XX series and LY-20			UL
Extruded tube for heat sink (optional)	Interchangeable	Interchangeable	Min.105°C; Min. 300V; VW-1	UL 224	UL
Internal wire (green/yellow Wire ,for Class I only)	Interchangeable	Interchangeable	Min.18AWG, Min.300V, 105°C or better	UL 758	UL

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Extruded tube for green /yellow wire	Interchangeable	Interchangeable	Min.105°C; Min. 300V; VW-1	UL 224	UL
Extruded tube for L3 (optional)	Interchangeable	Interchangeable	Min.105°C; Min. 300V; VW-1	UL 224	UL
Y2 capacitor (CY1,CY2,for Class I only)	TDK	CD, CS	Max.2200pF Min 250Vac Min.Y2 Min 125°C	IEC 60384-14, UL 60384-14	VDE, UL
	Walsin	AH, AC	Max.2200pF Min 250Vac Min.Y2 Min 125°C		VDE, UL
	Jya-Nay	JN, JY	Max.2200pF Min 250Vac Min.Y2 Min 125°C		VDE, UL
	Murata	KX, KH	Max.2200pF Min 250Vac Min.Y2 Min 125°C		VDE, UL
	Success	SB, SE, SF	Max.2200pF Min 250Vac Min.Y2 Min 85°C		VDE, UL
	Welson	WD	Max.2200pF Min 250Vac Min.Y2 Min 125°C		VDE, UL
	HAOHUA ELECTRONIC CO	CT7	Max.2200pF Min 250Vac Min.Y2 Min 85°C		VDE, UL
	CAPATRONICS	Y5V	Max.2200pF Min 250Vac Min.Y2 Min 85°C		VDE, UL
	Jerro	JX,JY	Max.2200pF Min 250Vac Min.Y2 Min 125°C		VDE, UL
Bridging capacitor (CY3)	TDK	CD	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC 60384-14, UL 60384-14	VDE, UL
	Walsin	AH			VDE, UL
	Jya-Nay	JN			VDE, UL
	Murata	KX			VDE, UL
	Success	SB, SE			VDE, UL
	Welson	WD			VDE, UL
	Jerro	JX			VDE, UL

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Optocoupler (U4)	Everlight Cosmo Lite-on Fairchild Bright	EL817 K1010 KP1010 LTV817 H11A817B BPC-817 BPC-817M BPC-817S	See appendix opto elec. Min 100°C	IEC 60950-1 IEC 60747-5-2 UL1577	FIMKO,UL FIMKO,UL FIMKO,UL FIMKO,UL FIMKO,UL
Choke (LF1) (No bobbin) (optional) [2])	GlobTek/BOAM/ HAOPUWEI/H EJIA	30R022058-00F	130°C Min.	IEC 60950-1	Test with equipment
Choke (LF3) (No bobbin) (optional) [2])	GlobTek/BOAM/ HAOPUWEI /H EJIA	30R200010-00F	130°C Min.	IEC 60950-1	Test with equipment
Transformer (T1) For output voltage is less than 14 Vdc [2]), [3])	DeeVan Enterprise Co., Ltd./GlobTek, /BOAM/ HAOPUWEI /HEJIA	90E266012-00F	Class B	IEC 60950-1	Test with equipment
Transformer (T1) For output voltage is 14-19Vdc [2]), [3])	DeeVan Enterprise Co., Ltd./GlobTek, /BOAM/ HAOPUWEI /HEJIA	90E266016-00F	Class B	IEC 60950-1	Test with equipment
Transformer (T1) For output voltage is 19.1-24Vdc [2]), [3])	DeeVan Enterprise Co., Ltd./GlobTek, /BOAM/ HAOPUWEI /HEJIA	90E266020-00F	Class B	IEC 60950-1	Test with equipment
--Bobbin	Sumitomo Changchun Plastics Hitachi	PM-9820 PM-9830 T375J T373J CP-J-8800	Phenolic, 150°C, V-0	UL 94	UL UL UL
--Insulation tape	3M Bondtec YAHUA SYMBIO INC JINGJIANG JINGYI	1350F-1, 1350T-1, 44 370S PZ series CT series 35660Y JY25-A	130°C	UL 510	UL UL UL UL UL

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
--Triple winding	Great Leoflon	TRW(B)	130°C	IEC 60950-1 Annex U	UL VDE
	Furukawa	TEX-E TEX-B		UL2353	UL VDE
	Totoku	TIW-E			UL CB by TUV Rheinland
	COSMOLINK	TIW-M			UL VDE
Black insulation sheet between primary and copper sheet	SKC Co LTD	SH71S	flame class V-0 or better, Min 105°C	UL94	UL
	TORAY	Lumirror H10			UL
	FORMEX	FORMEX GK			UL
	SABIC INNOVATIVE PLASTICS JAPAN L L C	FR60 (GG1), FR63 (GG1), FR65 (GG1), FR7 (GG1), FR700			UL
	LongChan	PP-BK series			UL

Supplementary information:

[1]) An asterisk indicates a mark which assures the agreed level of surveillance.

[2]) T1 /LF1/LF3 share the same construction from different vendors.

[3]) All the transformers have the similar construction, different in winding turns and layer of insulation tapes .

*) Varistor complies with UL 1449 which cover the required 15 combination pulses 6kV (1.2/50 μs)/ 3kA (8/20 μs) test this is more strict than table I group 1 of IEC 61051-2.

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer	Everlight/ Cosmo/ Cosmo/ Lite-on/ Fairchild/ Bright/ Bright/ Bright	
Type	EL817/ K1010/ KP1010/ LTV817/ H11A817B/ BPC-817/ BPC-817M/ BPC-817S	
Separately tested	Tested by FIMKO	
Bridging insulation.....	Reinforced insulation	
External creepage distance	7.7/> 8.0/> 8.0/7.8 /> 7.8 /> 7.0/ > 7.0/> 7.0mm	
Internal creepage distance	6.0 / * / * /5.2 />5.2/ * / * / * mm	
Distance through insulation	0.5 / >0.5 / >0.5 / 0.6 />0.7 />0.4 />0.4 />0.4mm	
Tested under the following conditions .....:	Reinforce	
Input	:	
Output	:	
supplementary information		
*) There is not any internal creepage distance. For all models, test according to clause 2.10.9 has been carried out ten times for the components at min: 100°C/25°C/0°C/25°C. Humidity treatment of 48 h as well as electric strength tests at 3000 V/1 minute and 5000 V/1 minute were carried out to the component after thermal cycling test.		

1.6.2	TABLE: electrical data (in normal conditions)					P
fuse #	Irated (A)	U (V / Hz)	P (W)	I (A)	Ifuse (A)	condition/status
For model GT-81081-6012-T3A						
F1	--	90/50	70.8	1.28	1.28	Output:12V/5A
F1	--	90/60	70.7	1.23	1.23	Output:12V/5A
F1	1.5	100/50	69.9	1.15	1.15	Output:12V/5A
F1	1.5	100/60	70.3	1.10	1.10	Output:12V/5A
F1	1.5	240/50	68.5	0.54	0.54	Output:12V/5A
F1	1.5	240/60	65.6	0.53	0.53	Output:12V/5A
F1	--	264/50	68.7	0.52	0.52	Output:12V/5A
F1	--	264/60	69.0	0.51	0.51	Output:12V/5A
For model GT-81081-6012-T3A-CC						
F1	--	90/50	69.2	1.16	1.16	Output:12V/5A
F1	--	90/60	68.9	1.22	1.22	Output:12V/5A
F1	1.5	100/50	68.6	1.03	1.03	Output:12V/5A
F1	1.5	100/60	68.9	1.02	1.02	Output:12V/5A
F1	1.5	240/50	67.7	0.48	0.48	Output:12V/5A
F1	1.5	240/60	67.9	0.51	0.51	Output:12V/5A
F1	--	264/50	67.9	0.45	0.45	Output:12V/5A
F1	--	264/60	68.1	0.48	0.48	Output:12V/5A
For model GT-81081-6020-0.9-T3A						
F1	--	90/50	68.9	1.27	1.27	Output:19.1V/3.14A
F1	--	90/60	68.3	1.20	1.20	Output:19.1V/3.14A
F1	1.5	100/50	68.1	1.10	1.10	Output:19.1V/3.14A
F1	1.5	100/60	67.6	1.07	1.07	Output:19.1V/3.14A
F1	1.5	240/50	66.8	0.51	0.51	Output:19.1V/3.14A
F1	1.5	240/60	66.7	0.50	0.50	Output:19.1V/3.14A
F1	--	264/50	67.0	0.50	0.50	Output:19.1V/3.14A
F1	--	264/60	66.9	0.48	0.48	Output:19.1V/3.14A
For model GT-81081-6020-0.9-T3A-CC						
F1	--	90/50	69.1	1.17	1.17	Output:19.1V/3.14A
F1	--	90/60	69.2	1.14	1.14	Output:19.1V/3.14A
F1	1.5	100/50	68.4	1.03	1.03	Output:19.1V/3.14A
F1	1.5	100/60	68.5	1.02	1.02	Output:19.1V/3.14A
F1	1.5	240/50	67.5	0.47	0.47	Output:19.1V/3.14A
F1	1.5	240/60	67.6	0.50	0.50	Output:19.1V/3.14A
F1	--	264/50	67.7	0.45	0.45	Output:19.1V/3.14A
F1	--	264/60	67.8	0.48	0.48	Output:19.1V/3.14A
For model GT-81081-6024-T3A						

fuse #	Irated (A)	U (V / Hz)	P (W)	I (A)	Ifuse (A)	condition/status
F1	--	90/50	68.7	1.24	1.24	Output:24V/2.5A
F1	--	90/60	68.6	1.19	1.19	Output:24V/2.5A
F1	1.5	100/50	68.2	1.12	1.12	Output:24V/2.5A
F1	1.5	100/60	67.8	1.07	1.07	Output:24V/2.5A
F1	1.5	240/50	67.4	0.54	0.54	Output:24V/2.5A
F1	1.5	240/60	67.4	0.53	0.53	Output:24V/2.5A
F1	--	264/50	67.8	0.52	0.52	Output:24V/2.5A
F1	--	264/60	67.4	0.50	0.50	Output:24V/2.5A
For model GT-81081-6024-T3A-CC						
F1	--	90/50	67.4	1.21	1.21	Output:24V/2.5A
F1	--	90/60	65.9	1.20	1.20	Output:24V/2.5A
F1	1.5	100/50	66.7	1.10	1.10	Output:24V/2.5A
F1	1.5	100/60	66.8	1.10	1.10	Output:24V/2.5A
F1	1.5	240/50	65.7	0.47	0.47	Output:24V/2.5A
F1	1.5	240/60	65.6	0.46	0.46	Output:24V/2.5A
F1	--	264/50	66.0	0.45	0.45	Output:24V/2.5A
F1	--	264/60	65.9	0.45	0.45	Output:24V/2.5A
Supplementary information:						

2.1.1.5 c1)	TABLE: max. V, A, VA test			P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
Model GT-81081-6012-T3A				
12	5.0	12.2	7.05	66.1
Model GT-81081-6024-T3A				
24	2.5	25.1	3.91	75.0
supplementary information:				
The above measurements are the maximum values when each loaded individually with little load (max. V and max. A not obtained at the same time).				

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

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
GT-81081-6024-T3A			
T1 output pins	122	--	--
T1 output pins after D5	--	25	D5

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
GT-81081-6024-T3A	
D5 S-c	2.5V
supplementary information:	
Vin=264Vac, 60Hz. S-c=Short circuit.	

2.4.2	TABLE: limited current circuit measurement	P

Location	Voltage (V)	Current (mA)	Freq. (KHz)	Limit (mA)
Model:GT-81081-6024-T3				
CY3	24.8	12.4	61.0	42.7
supplementary information:				
Vin=264Vac, 60Hz.				

2.5	TABLE: limited power sources	P

Circuit output tested: Model GT-81081-6020-0.9-T3A				
Measured Uoc (V) with all load circuits disconnected:	19.23Vdc			
	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Output	4.41	8.0	70.7	100
Output (U4,Oc)	4.38	8.0	82.3	100
supplementary information:				
S-c=short circuit. Vin=264V, 60Hz.				

Circuit output tested: Model GT-81081-6024-T3A				
Measured Uoc (V) with all load circuits disconnected:	24.39Vdc			
	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Output	2.93	8.0	75.0	100
Output (U4,Oc)	3.36	8.0	80.7	100
supplementary information:				
S-c=short circuit. Vin=264V, 60Hz.				

Circuit output tested: Model GT-81081-6012-T3				
Measured Uoc (V) with all load circuits disconnected:	12.24Vdc			
	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Output	6.39	8.0	72.4	100
Output (U4,Oc)	6.37	8.0	79.6	100
Output (U3 pin K-G, Oc) 2)	0	8.0	0	100
Output(U3 pin K-G, Sc) 2)	0	8.0	0	100
Output (ZD4, Oc)	6.48	8.0	73.0	100
Output (D5, Sc) 1)	0	8.0	0	100
supplementary information:				
S-c=short circuit. Vin=264V, 60Hz.				

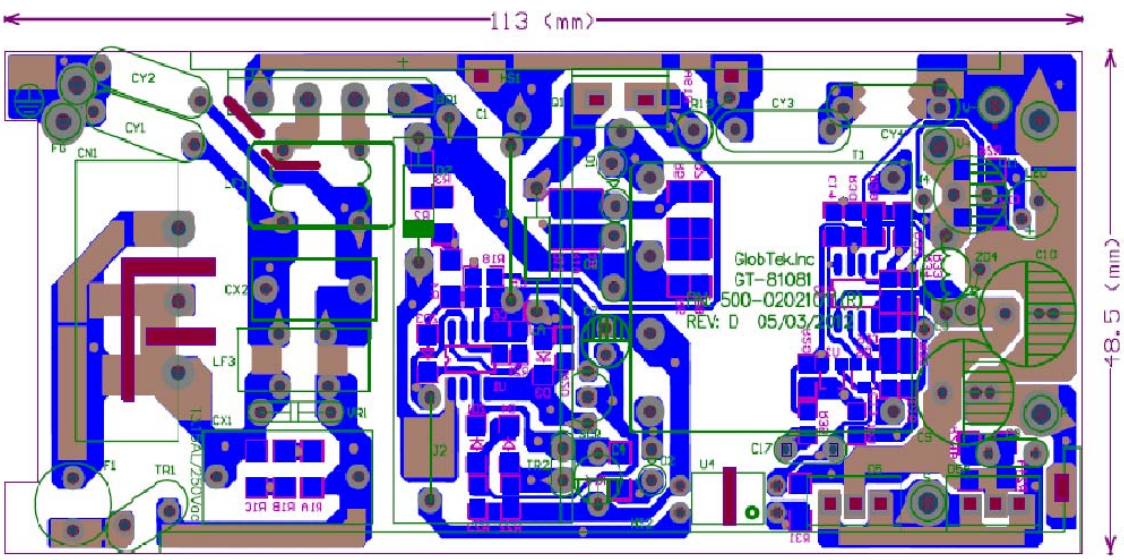
Circuit output tested: Model GT-81081-6015-T3				
Measured Uoc (V) with all load circuits disconnected:	15.57Vdc			
	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Output	6.05	8.0	78.5	100
Output (U4,Oc)	6.07	8.0	82.1	100
Output (U3 pin K-G, Oc) 2)	0	8.0	0	100
Output(U3 pin K-G, Sc) 2)	0	8.0	0	100
Output (ZD4, Oc)	6.08	8.0	79.6	100
Output (D5, Sc) 1)	0	8.0	0	100
supplementary information:				
S-c=short circuit. Vin=264V, 60Hz.				

2.10.2	Table: working voltage measurement	--

Location	RMS voltage (V)	Peak voltage (V)	Comments
CY3 pri.pin to sec. pin	220	354	--
T1 pin 1- pin F	220	380	--
T1 pin 1- pin S	221	424	--
T1 pin 3- pin F	225	398	--
T1 pin 3- pin S	219	354	--
T1 pin 4- pin F	250	512	--
T1 pin 4- pin S	**277**	**550**	--
T1 pin 6- pin F	225	464	--
T1 pin 6- pin S	220	356	--
U4 pin1 to pin3	235	376	--
U4 pin2 to pin3	234	374	--
U4 pin1 to pin4	237	376	--
U4 pin2 to pin4	236	373	--
Supplementary information:			
The highest measured working voltages in transformer are indicated with bold characters. Vin = 240Vac, 60Hz			

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)
Functional						
Line – Neutral before fuse (on PCB)	340	240	1.8	5.0	2.5	5.0
Line before fuse – Line after fuse (on PCB)	340	240	1.8	2.5	2.5	2.5
basic						
Under CY1,CY2	340	240	2.0	8.0	2.5	8.5
Reinforced:						
Transformer core to Sec. HS2 (with 10N)	550	277	4.4	6.0	5.6*)	10.0
Transformer core to C11 body (with 10N)	550	277	4.4	8.0	5.6*)	10.0
Transformer core to CY3 sec. pin (with 10N)	550	277	4.4	8.0	5.6*)	10.0
T1 pri pin to sec. pin	550	277	4.4	10.0	5.6*)	10.0
U4 pri pin to sec. pin	376	240	4.0	7.2	5.0	7.5
CY3 pri pin to sec. pin	354	240	4.0	6.0	5.0	6.0
Supplementary information:						
1) L3 sleeved with extruded tube; 2) LF1,LF3,C4,C9,C11 and C10 were fixed by non-chemical bonding glue; 3) HS1 is enclosed by two layers of insulation tapes as supplementary insulation; 4) HS2 is enclosed by three layers of insulation tapes as reinforced insulation; 5) The core of T1 is enclosed by two layers of insulation tapes to separate from components around of secondary circuit. Insulation sleeve was used as basic insulation for winding exit leads. *) Linear interpolation is used.						

Copy of PCB, layout of tracing (not in 1:1 scale):



2.10.5	TABLE: distance through insulation measurements				P
distance through insulation di at/of:		Up (V)	test voltage (V)	required di (mm)	di (mm)
Optocoupler (reinforced insulation)		376	3000Vac	⩾0.4	Approved comp.1)
Enclosure		550	3000Vac	⩾0.4	2 .0
Supplementary information:					
1) Optocoupler are approved components.					

4.5	TABLE: maximum temperatures					P
	test voltage (V) :	90V 60Hz ***1)***	264Vac 50Hz ***1)***	90V 60Hz ***2)***	264Vac 50Hz ***2)***	—
maximum temperature T of part/at:		T (°C)				allowed Tmax (°C)
Enclosure inside		55	54	55	55	--
Enclosure outside		49	48	47	47	95
Inlet		52	50	52	51	70
Output cord		53	52	56	57	80
LF1 winding		82	64	72	62	120*)
LF3 winding		66	59	63	59	120*)
Capacitor CX1		62	59	60	60	100
Capacitor CY1		58	53	56	53	85
Capacitor CY3		72	70	68	68	125
PCB under Q1		73	68	70	70	105
Capacitor C1		69	63	69	65	105
T1 core		79	77	71	71	110*)
T1 coil		81	78	84	83	110*)
Opto-coupler U4		73	72	70	71	100
PCB under D5		73	73	74	76	105
Ambient		40	40	40	40	--
supplementary information:						
Tmra= 40°C. *)Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only. ***1).*** For model GT-81081-6012-T3A ***2).*** For model GT-81081-6012-T3A-CC						

4.5	TABLE: maximum temperatures					P
	test voltage (V) :	90V 60Hz ***1)***	264Vac 50Hz ***1)***	90V 60Hz ***2)***	264Vac 50Hz ***2)***	—
maximum temperature T of part/at:		T (°C)				allowed Tmax (°C)
Enclosure inside		77	75	75	73	--
Enclosure outside		69	67	70	68	95
Inlet		57	52	67	61	70
Output cord		76	74	69	67	80
LF1 winding		98	77	96	75	120*)
LF3 winding		83	72	83	71	120*)
Capacitor CX1		80	74	87	73	100
Capacitor CY1		79	70	75	66	85
Capacitor CY3		90	85	85	80	125
PCB under Q1		92	83	86	79	105
Capacitor C1		88	78	86	77	105
T1 core		87	84	84	83	110*)
T1 coil		96	93	90	89	110*)
Opto-coupler U4		87	83	85	82	100
PCB under D5		90	89	87	86	105
Ambient		40	40	40	40	--

supplementary information:

Tmra= 40°C. *)Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only.
1). For model GT-81081-6024-T3A
2). For model GT-81081-6024-T3A-CC

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

Part	Test temperature (°C)	Impression diameter (mm)
Enclosure	125	1.7
Supplementary information:		

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Enclosure	See table 1.5.1	See table 1.5.1	Min: 2.0 mm thickness	94V-0	See table 1.5.1
Supplementary information:					

5.1	TABLE: touch current measurement		P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
GT-81081-6024-T3A			
Line to output connector	0.01	0.25	CY1 and CY2 disconnected
Neutral to output connector	0.01	0.25	CY1 and CY2 disconnected
Line to plastic enclosure(foil)	0.02	0.25	
Neutral to plastic enclosure(foil)	0.02	0.25	
Line to Ground	0.47	3.5	
Neutral to Ground	0.18	3.5	
GT-81081-6024-T2			
Line to output connector	0.01	0.25	
Neutral to output connector	0.01	0.25	
Line to plastic enclosure(foil)	0.02	0.25	
Neutral to plastic enclosure(foil)	0.02	0.25	
supplementary information:			
Vin= 264, 60Hz CY1=CY2=2200pF,CY3=3300pF			

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 :			
Primary to GND(for Class I constuction)	AC	1834	No
Reinforced:			
Input and output	AC	3000	No
Input and accessible parts/enclosure(unearthed)	AC	3000	No
T1 primary and secondary	AC	3000	No
T1 secondary and core	AC	3000	No
Insulation tape used in T1(Tested with 1 layer)	AC	3000	No
Insulation tape used on HS1/HS2(Tested with 1 layer)	AC	3000	No
Extruded tube used on HS1/HS2	AC	3000	No
Black insulation sheet between primary and copper sheet	AC	3000	No
Supplementary information:			
No flash over or insulation breakdown after test. Transformers (see list of critical components) were tested separately with 3000Vac / 60s from primary to secondary.			

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) .....:	25°C, if not specify the ambient temperature.	—
	Power source for EUT: Manufacturer, model/type, output rating .....:	Refer to page 2.	—

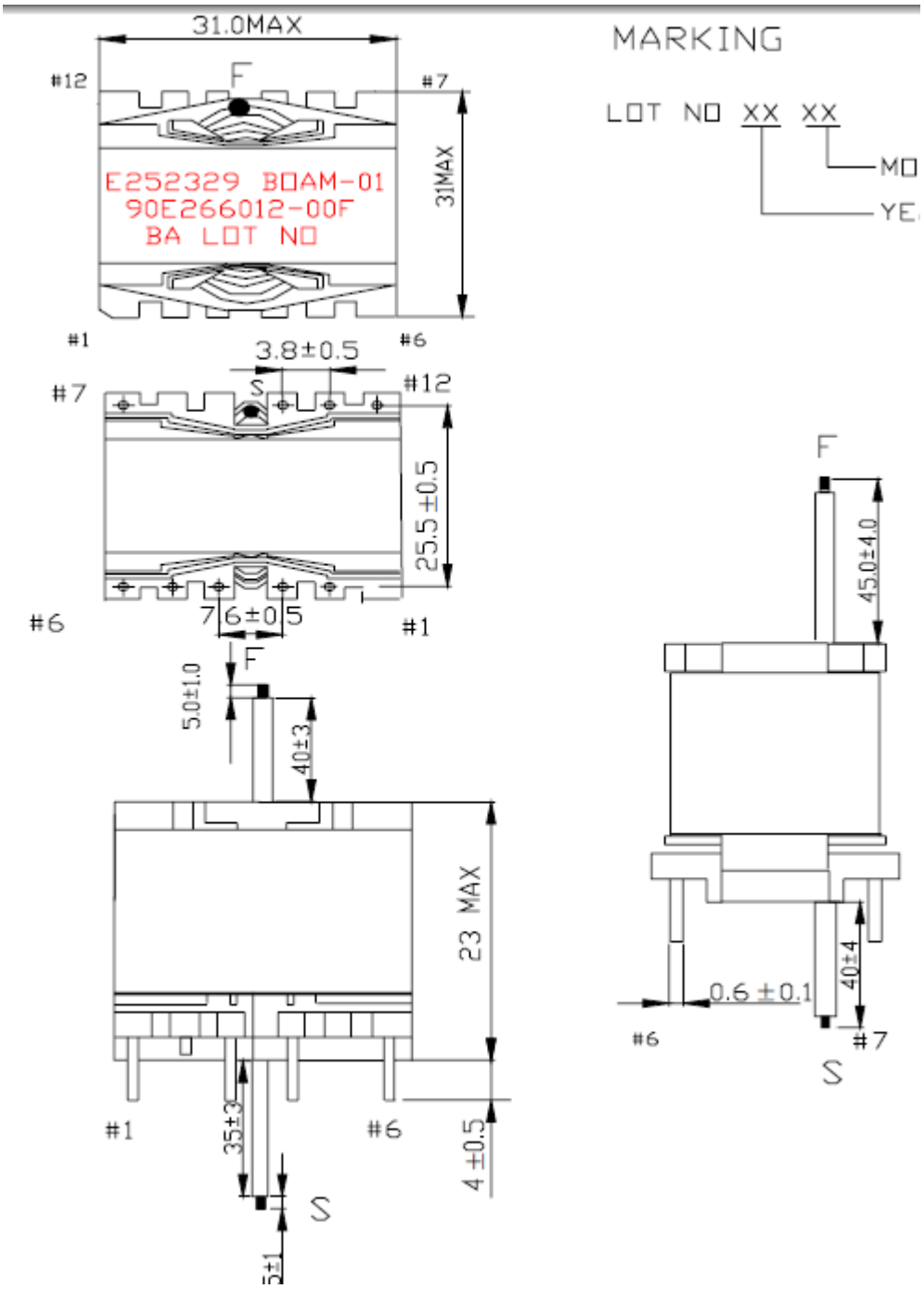
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
For model GT-81081-6024-T3A:						
U4 pin1-2	s-c	264	5min	F1	0.06	Cuicrt protected, no hazards.
U4 pin3-4	o-c	264	2.2h	F1	0.62	Steady state, no hazards occurred. Output current: 2.8A, T1 winding: 114.5°C
BD1 (AC to +)	s-c	264	<1s	F1	*	F1 open, no hazards.
C1	s-c	264	<1s	F1	*	F1 open, no hazards.
Q1 (G-S)	s-c	264	5min	F1	0.05	Unit shut down, no damage, no hazards.
Q1 (D-S)	s-c	264	<1s	F1	*	Q1, R19A and R19B damaged, Fuse opened 1s, no hazard. s
Q1 (D-G)	s-c	264	<1s	F1	*	Q1 damaged, Fuse opened in 1s, no hazard.
D7	s-c	264	5min	F1	0.05	Normal operation, no hazards
D1	s-c	264	5min	F1	0.48	Normal operation, no hazards
C2	s-c	264	5min	F1	0.49	Normal operation, no hazards
D2	s-c	264	5min	F1	0.06	Cuicrt protected, no hazards.
T1 (4) - (6)	s-c	264	5min	F1	0.05	Cuicrt protected, no hazards.
T1 (F)-(S)	s-c	264	<1s	F1	*	Q1 and D5 damaged, Fuse opened in 1s, no hazards.
R19A	s-c	264	<1s	F1	*	Q1 damaged, Fuse opened, no hazards .
R19A	o-c	264	5min	F1	0.47	Normal operation, no hazards.
ZD3	s-c	264	5min	F1	0.06	Cuicrt protected, no hazards.
C4	s-c	264	5min	F1	0.06	Cuicrt protected, no hazards.
D5	s-c	264	<1s	F1	*	Q1 damaged, Fuse opened, no hazards.
Output	s-c	264	5min	F1	0.05	Unit shut down, no damage, no hazards.
Output	o-l	264	1.4h	F1	0.55	Output overloaded to 3.75A, T1: 91°C stable, no hazard
For model GT-81081-6024-T3A-CC:						
Output	s-c	264	5min	F1	0.06	Unit shut down, no damage, no hazards.
Output	o-l	264	3.3h	F1	0.57	Output overloaded to 4.25A, T1: 113°C stable, no hazard

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
For model GT-81081-6020-0.9-T3A						
Output	s-c	264	5min	F1	0.05	Unit shut down, no damage, no hazards.
Output	o-l	264	3.5h	F1	0.53	Output overloaded to 4.40A, T1: 104°C stable, no hazard
For model GT-81081-6020-0.9-T3A-CC						
Output	s-c	264	5min	F1	0.05	Unit shut down, no damage, no hazards.
Output	o-l	264	3.5h	F1	0.53	Output overloaded to 4.25A, T1: 129°C stable, no hazard
For model GT-81081-6012-T3A						
Output	s-c	264	5min	F1	0.06	Unit shut down, no damage, no hazards.
Output	o-l	264	3.5h	F1	0.56	Output overloaded to 6.85A, T1: 89°C stable, no hazard
For model GT-81081-6012-T3A-CC:						
Output	s-c	264	5min	F1	0.06	Unit shut down, no damage, no hazards.
Output	o-l	264	3.5h	F1	0.56	Output overloaded to 7.30A, T1: 133°C stable, no hazard
Supplementary information:						
s-c=short circuit, o-l=overload, o-c=open circuit. *) Fuse current is more than fuse rating times 2.1, repeated the test with each source of fuse and same result come out.						

C.2	TABLE: transformer						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
T1	Reinforced: Primary to secondary	550	277	3000 Vac	4.4	5.6 ***1)***	*)
T1	Reinforced: Secondary winding to core	550	277	3000 Va	4.4	5.6 ***1)***	*)
T1	Reinforced: Secondary pin to core	550	277	3000 Va	4.4	5.6 ***1)***	*)
T1	Reinforced: Primary pin to secondary pin	550	277	3000 Va	4.4	5.6 ***1)***	*)
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T1	Reinforced: Primary to secondary			3000Vac	6.0	7.0	TIW
T1	Reinforced: Secondary winding to core ***2)***			3000Vac	6.0	7.0	TIW
T1	Reinforced: Secondary pin to core ***2)***			3000Vac	10.0	10.0	TIW
T1	Reinforced: Primary pin to secondary pin			3000Vac	24.0	24.0	TIW
supplementary information:							
*) 2 or 3 layers / 0.4mm / Annex U ***1)*** Linear interpolation method is used. ***2)*** T1 core considered as primary.							

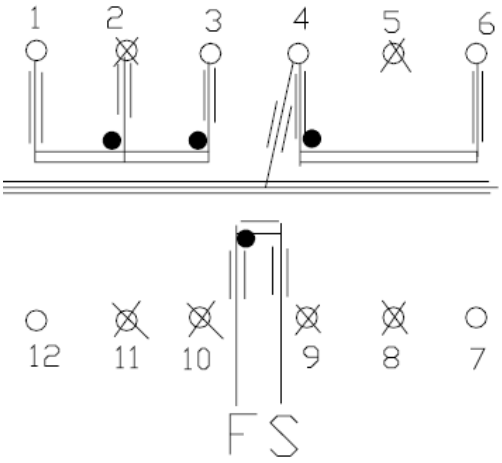
Construction / winding diagram / component part no.: T1

1 DIMENSION(mm)



Construction / winding diagram / component part no.: T1

2 EQUIVALENT CIRCUIT (BOTTOM VIEW)



* REMOVE PIN # 5 8 9 10 11, CUT OFF #2
* THE "λ" MARKS ARE START POINT
* THE " || " MARKS TUBE

3 ELECTRICAL CHARACTERISTICS

NO.	ITEM	TERMINAL	SPECIFICATION	REMARKS
1	INDUCTANCE	3-1	650-750 μ H	HIOKI 3531 Z HITESTER (1KHz,0.25V)
2	DIELECTRIC WITHSTAND VOLTAGE	PCOIL—SCOIL	AC4.0KV 60SEC	HPT-50100Z PUNCTURE TESTER:5mA
		SEC-CORE	AC 1.5KV 60SEC	
		PRI—CORE	AC 1.5KV 60SEC	
3	INSULATION RESTSTANCE	COIL—COIL COIL—CORE	100 MΩ MIN DC 500V	MG 11350 DIGITAL INSULATION RESISTANCE TESTER
4	DCR TEST	3-1	2.8 Ω MAX	AT25℃
5	LEAKAGE	3-1 (SHORT SEC)	30μH MAX	1KHZ 0.25V

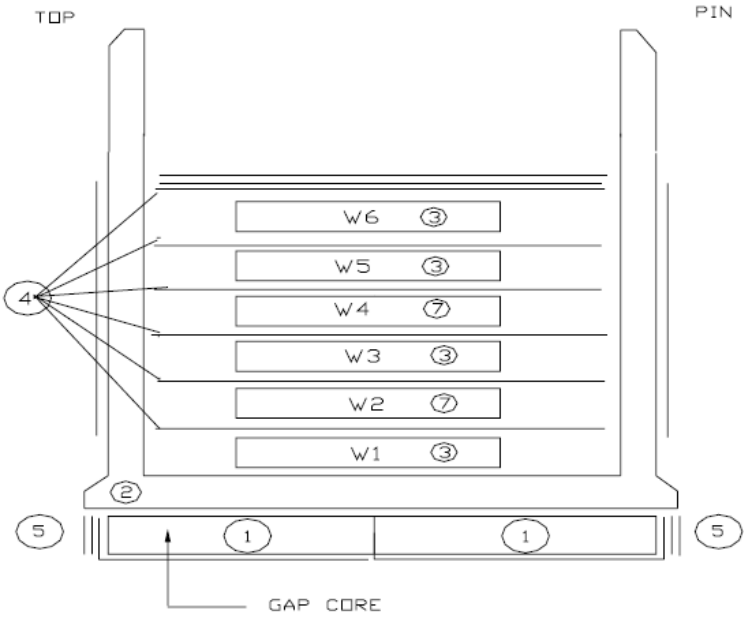
Construction / winding diagram / component part no.: T1

4. WINDING SPECIFICATION

NO	PIN NO. (S-F) S:START, F:FINISH	WIRE	TURNS	WINDING METHOD
W1	(3)—(2)	2UEW Φ0.45	18	SOLENOID
	INSULATION TAPE	t= 0.025mm, w=9.5mm, 1LAYER		
W2	(4)	COPER0.05*8+TAPE	1.0	CENTER
	INSULATION TAPE	t= 0.025mm, w=9.5mm, 1LAYERS		
W3	(F)—(S)	TEX-E Φ0.65*3	6	SOLENOID
	INSULATION TAPE	t= 0.025mm, w=9.5mm,1LAYERS		
W4	(4)	COPER0.05*8+TAPE	1.0	CENTER
	INSULATION TAPE	t= 0.025mm, w=9.5mm,1LAYER		
W5	(2)—(1)	2UEW Φ0.45	17	SOLENOID
	INSULATION TAPE	t= 0.025mm, w=9.5mm, 1LAYER		
W6	(4) —(6)	2UEW Φ0.16*5	6	SPACE
	INSULATION TAPE	t= 0.025mm, w=9.5mm, 3LAYERS		

CORE FIXING : TAPE t= 0.025mm, w=10mm, 2LAYERS
OUTER WRAPPED TAPE t= 0.025mm, w=14.5mm, 3LAYERS
OUTER FIXED TAPE t=0.025 w=20mm ,2LAYERS

5 INTERNAL CONSTRUCTION



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

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”		
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P
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.		

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	No headphones or earphones connectors in the equipment.	N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		N/A
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *	Considered.	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
	Zx Protection against excessive sound pressure from personal music players		N/A

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

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

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."  **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.3 Wireless listening devices In wireless mode: – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	The equipment is provided with fuses and complies with a).	P

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		
2.7.2	This subclause has been declared 'void'.	Considered.	—
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 [a] | Over 6 up to and including 10| (0,75) [b] 1,0 | Over 10 up to and including 16| (1,0) [c] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a]. In NOTE 1, applicable to Table 3B, delete the second sentence.	Power supply cord has not been checked, refer to Summary of Testing.	N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N/A
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	Rated current is < 10A.	N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).	Considered.	—
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.	Considered.	—

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.	The unit does not emit X-ray radiation.	N/A
Bibliography	Additional EN standards.		—

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

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	The power supply cord has not been checked, see summary of testing.	—
1.2.13.14	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1	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).	Suitable capacitors used.	P
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag”	For Class I construction, the marking text for Norway is show in the lable , see Label representing for Class I construction. See summary of testing for Finland and Sweden . For Class II construction, it is not applied.	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. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”	The equipment is not connect to cable distribution system.	N/A

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

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

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V,		
3.2.1.1 (A2:2013)	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c	The power supply cord has not been checked, see summary of testing.	—
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	The power supply cord has not been checked, see summary of testing.	—

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	The power supply cord has not been checked, see summary of testing.	—
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.	The power supply cord has not been checked, see summary of testing.	—
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	The power supply cord has not been checked, see summary of testing.	—
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	The power supply cord has not been checked, see summary of testing.	—
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.	The power supply cord has not been checked, see summary of testing.	—
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.	Not direct plug-in equipment.	N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Touch current not exceeding 3.5mA.	N/A
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	No TNV circuits.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.	No TNV circuits	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.	No TNV circuits	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.	No CDS circuits.	N/A
7.3	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.		N/A

Annex ZD
(informative)

IEC and CENELEC code designations for flexible cords

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

ATTACHMENT: AUSTRALIAN / NEW ZEALAND DIFFERENCES
Test results according to CB BULLETIN

Clause	Requirements – Test	Result – Remark	Verdict
ZZ.1 Introduction This Appendix sets out variations and additional requirements to cover issues which have not been addressed by the International Standard. These variations indicate national variations for purposes of the IECEE CB System and will be published in the IECEE CB Bulletin.			
ZZ.2 Variations The following variations apply to the source text.:			
1.2	Insert the following between 'person, service' and 'range, rated frequency': POTENTIAL IGNITION SOURCE..... 1.2.12	Considered.	P
1.2.12.201	Insert a new Clause 1.2.12.201 after Clause 1.2.12.15 as follows: **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. Such a faulty contact or interruption in an electrical connection includes those which may occur in **CONDUCTIVE PATTERNS** on **PRINTED BOARDS.** NOTE 201: An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 202: This definition is from AS/NZS 60065:2003.	Considered.	P
1.5.1	1. Add the following to the end of the first paragraph: 'or the relevant Australian/New Zealand Standard.' 2. In NOTE 1, add the following after the word 'standard': 'or an Australian/New Zealand Standard'.	All critical components are IEC and UL certified.	P
1.5.2	*Add* the following to the end of first and third dash items: 'or the relevant Australian/New Zealand Standard'.	All critical components are IEC and UL certified.	P

<table>
<tr><td>3.2.5.1</td><td>Modify Table 3B as follows:

Delete the first four rows and replace with the following:

<table>
<tr><th rowspan="2">RATED CURRENT of equipment
A</th><th colspan="2">Minimum conductor sizes</th></tr>
<tr><th>Nominal cross-sectional area
mm²</th><th>AWG or kcmil [cross-sectional area in mm²]
see Note 2</th></tr>
<tr><td>Over 0.2 up to and including 3</td><td>0,5 [a]</td><td>18 [0,8]</td></tr>
<tr><td>Over 3 up to and including 7.5</td><td>0,75</td><td>16 [1,3]</td></tr>
<tr><td>Over 7.5 up to and including 10</td><td>(0,75) [b] 1,00</td><td>16 [1,3]</td></tr>
<tr><td>Over 10 up to and including 16</td><td>(1,0) [c] 1,5</td><td>14 [2]</td></tr>
</table>

Delete Note 1.

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 entry to the plug does not exceed 2 m (0,5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191).</td><td>The power cord has not been checked, refer to Summary of Testing.</td><td>—</td></tr>
<tr><td>4.1.201</td><td>Insert a new Clause 4.1.201 after Clause 4.1 as follows:

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.</td><td></td><td>N/A</td></tr>
<tr><td>4.3.6</td><td>Delete the third paragraph and replace with the following:

Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</td><td>Not direct plug in equipment.</td><td>N/A</td></tr>
<tr><td>4.3.13.5</td><td>Add the following to the end of first paragraph:

‘or AS/NZS 2211.1’.</td><td>No Laser product used.</td><td>N/A</td></tr>
<tr><td>4.7</td><td>Add the following new paragraph to the end of the clause:

For alternative tests refer to Clause 4.7.201.</td><td>Alternative tests not performed.</td><td>N/A</td></tr>
</table>

4.7.201	*Insert* a new Clause 4.7.201 after Clause 4.7.3.6 as follows: **4.7.201 Resistance to fire – Alternative tests** **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 originating from inside the apparatus, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: - small mechanical parts, the mass of which does not exceed 4g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1,750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. 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. 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. For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring. **4.7.201.2 Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.	All materials have suitable flame class, no testing required.	N/A

<table>
<tr>
<td>4.7.201</td>
<td>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall not be carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.

4.7.201.3 Testing of insulating materials

Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C

The test shall also be carried out on other parts of insulating material which are within a distance of 3 mm of the connection.

NOTE: Contacts in components such as switch contacts are considered to be connections.

For parts which withstand the glow-wire test but
produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested.

The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:

<table>
<tr><th>Clause of AS/NZS 60695.11.5</th><th>Change</th></tr>
<tr><td>9 Test procedure</td><td></td></tr>
<tr><td>9.2 Application of needle-flame</td><td>Replace the first paragraph with:

The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner

Replace the second paragraph with:

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>Replace with:

The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.</td></tr>
<tr><td>11 Evaluation of test results</td><td>Replace with:

The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</td></tr>
</table>
</td>
<td>All materials have suitable flame class, no testing required.</td>
<td>N/A</td>
</tr>
</table>

4.7.201	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10, provided that the sample tested was not thicker than the relevant part. **4.7.201.4 Testing in the event of non-extinguishing material** If the 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 tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. 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. 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. 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.	All materials have suitable flame class, no testing required.	N/A

4.7.201	**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.** The test is not carried out if the – - Printed board does not carry any **POTENTIAL IGNITION SOURCE**; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category FV-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 apparent 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 FV-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. Compliance shall be determined using the smallest thickness of the material. NOTE: Available 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 from more than 2 min when the circuit supplied is disconnected.	All materials have suitable flame class, no testing required.	N/A
6.2.2	*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.	No TNV circuitry.	N/A

6.2.2.1	*For* Australia only, delete the first paragraph including the Notes, and replace with the following: In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, Uc, is: - 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): 1.5 kV. NOTE 201: The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. 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.	No TNV circuitry.	N/A
6.2.2.2	*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): 3 kV; and - for 6.2.1 b) and 6.2.1 c): 1.5 kV. NOTE 201: Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. 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.	No TNV circuitry.	N/A
7.3	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 fortelecommunications purposes.	Not such equipment.	N/A
Annex P	*Add* the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets	Considered.	P

Index	1. Insert the following between ‘asbestos, not to be used as insulation’ and ‘attitude see orientation’: AS/NZS 2211.1..... ..... 4.3.13.5 AS/NZS 3112.....4.3.6 AS/NZS 3191..... 3.2.5.1 (Table 3B) AS/NZS 60064..... 4.1.201 AS/NZS 60695.2.11..... 4.7.201.2, 4.7.201.3 AS/NZS 60695.11.10.....4.7.201.1, 4.7.201.5 AS/NZS 60695.11.5..... 4.7.201.3 2. Insert the following between ‘positive temperature coefficient (PTC) device’ and ‘powder’: potential ignition source.....1.2.201, 4.7.201.3, 4.7.201.5	Considered.	—

IEC 60950-1:2005			
Clause	Requirements – Test	Result – Remark	Verdict
National Differences for Canada			
Canada and the United States of America have adopted a single, bi-national standard, Amendment 1:2011 to CAN/CSA-C22.2 No. 60950-1-07, Second Edition, which is based on IEC 60950-1 2nd Ed. Am1, Second Edition. This bi-national standard should be consulted for further details on the national conditions and differences summarized below.			
SPECIAL NATIONAL CONDITIONS The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations.			
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.	Considered	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Equipment acceptable for connect to 20A Protection.	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.	No external interconnecting flexible cord or cable assemblies.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.	No external interconnecting flexible cord or cable assemblies.	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.	Only one phase conductor.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and	Only one phase conductor.	N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A
	A voltage rating is not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and “Class 2” or equivalent.	Not permanently connected equipment and not equipment with non-detachable power supply cord	N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A

2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.	No such component.	N/A
2.6.3.3	Modify first column on Table 2D to “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”	Considered.	P
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, lamp holders or such transformers.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	The equipment provide AC inlet.	N/A
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment.	The power cord has not been checked, refer to Summary of Testing.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements.	The Equipment not connected to DC power system.	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.	The equipment is not permanently connected to the mains.	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.	Power supply cord has not been check, refer to Summary of Testing.	N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected to the mains.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	The equipment provide AC inlet.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).	The equipment provide AC inlet.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are	No permanent wiring. The equipment is provided with an appliance inlet.	N/A
	- rated 125 percent of the equipment rating, and		N/A

	- are specially marked when specified (1.7.7).		N/A
3.3.5	Revise first column of Table 3E to “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”	The equipment provide AC inlet.	N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	No such motors in the equipment.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.	No disconnect switch in the equipment.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No such battery.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquids within the equipment.	N/A
4.3.13.5	Equipment with lasers meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	No laser is used.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	The equipment has no combustible area greater than 27 cubic feet.	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) have a flame spread rating of 50 or less.	The equipment has no combustible material greater than 0.93m^2 or single dimension greater than 1.8m.	N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.	No such part.	N/A
	Other National Differences		

1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Critical components are IEC certified. See list of critical components in main CB report (§ 1.5.1). There may be additional requirements for components in CSA.	—
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.	The Equipment not connected to DC power system.	N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuitry.	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.	No TNV circuitry.	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.	For Class I equipment	P
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are provided with suitable enclosure to reduce the risk of injury due to the implosion of the CRT.	No CRTs in the equipment.	N/A
4.3.2	Equipment with handles complies with special loading tests.	The equipment has no handles.	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests.	No TNV circuitry.	N/A

5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded.	No such part.	N/A
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuitry.	N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.	This equipment is not Document shredding machines.	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.	No TNV circuitry.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.	No TNV circuitry.	N/A
Annex NAF	Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge).	This equipment is not Document shredding machines.	N/A

Annex NAF **Household/home office Document shredders**			
NAF1.7	Markings and Instructions		
NAF 1.7.15	Symbols alerting the user to the following considerations are provided adjacent to the document feed opening. These symbols are explained in the instructions:	This equipment is not Document shredding machines.	N/A
	Product is not intended for use by children (product is not a toy) ..... :		N/A
	Avoid touching the document feed opening with hands ..... :		N/A
	Avoid clothing touching the document feed opening..... :		N/A
	Keep aerosol products away (applicable for product with brush motor only) ..... :		N/A
	The ⚠ (ISO 7000-0434) symbol to alert user to important operating, maintenance and/or servicing instructions and the explanation of above symbols		N/A
	Marking is permanent, comprehensible and easily discernible on the equipment.		N/A

NAF 2.8.3	Safety interlock can not be activated by articulated accessibility probe (NAF.1)		N/A
NAF 3.4	Isolation switch complying with 3.4.2 is provided to disconnect power to hazardous moving parts	This equipment is not Document shredding machines.	N/A
	On/off marking is provided for two position switch . :		N/A
	Off marking for multi-position switch ..... :		N/A
NAF 4.4	Protection against hazardous moving parts	This equipment is not Document shredding machines.	N/A
	Accessibility probe (Fig NAF.1) is inserted without force into each opening and did not contact hazardous moving parts		N/A
	Operator accessible guards are removed and Accessibility wedge is inserted into each opening according without contacting mechanical hazards:		N/A
	Strip-cut (45N): ..... :		N/A
	Cross-cut (90N) ..... :		N/A

ATTACHMENT: KOREAN DIFFERENCES
Test results according to CB BULLETIN

Clause	Requirements – Test	Result – Remark	Verdict
1.5.101	Addition Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305 and 8305).	A plug, separately certified according to the Korean standards, is to be used when supplied to Korea. Refer to Summary of testing in main report.	—
7	Addition EMC The apparatus shall comply with the relevant CISPR standards.	Must be considered before marketing in Korea.	—

ATTACHMENT: SINGAPORE DIFFERENCES
to IEC 60950-1 (ed.2)

No	Item	Requirement	Result - Remark	Verdict
The following is the national differences in accordance with safety authority website www.spring.gov.sg/ , ref. Singapore Consumer Protection (Safety Requirements) - Information booklet - chapter 7 (page 20 - 21). Based on information by Singapore NCB – PSB Corp.				
7 SAFETY AUTHORITY'S REQUIREMENTS The Safety Authority monitors the safety of the controlled goods sold in Singapore by investigating all complaints, incidents and accidents reported to the authority. Experiences gained are translated into the Safety Authority's Requirements. These requirements are to be fulfilled in addition to the applicable safety standards.				
Applicable to all electrical products				
3	All appliances	All appliances must be tested to 230 VAC.	AC Input: Tested within the range	P
4	Voltage selector (voltage mis-match test)	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.	No voltage selector used.	N/A
5	Tropical condition test	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.	Complied with requirement, refer to main test report.	P
6	Class I appliances (3-pin mains plug)	All Class I appliances must be fitted with 3-pin mains plugs complied with SS 145/SS 472 that are registered with the Safety Authority.	The power cord has not been checked, refer to Summary of Testing.	—
7	Class II appliances (mains plug)	a) All Class II appliances must be fitted with 2-pin mains plug (Appendix W) complied with IEC 83: 1975 (Standard C5, Version II) or EN 50075: 1991. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are complied with SS 145 and registered with the Safety Authority.	The power supply cord has not been checked, see summary of testing.	—

8	Appliances rated ≥ 3 kW or connected to fixed wiring	Electric appliance ≥ 3 kW must be connected to fixed wiring. All connection to fixed wiring must be in accordance with Code of Practice CP5.	The rated power is less than 3kW.	N/A
9	Detachable power cord set (consists of mains plug, mains cord and appliance connector	Detachable power cord set must be listed in the test report critical component list.	The power cord has not been checked, refer to Summary of Testing.	—
10	Circuit diagrams	Circuit diagrams must be indicated with component's values for products tested to IEC 60065 and IEC 60950.	Must be considered when market to Singapore.	—
11	Circuit diagrams of electronic modules in electrical appliances	Circuit diagrams of the electronic modules in the electrical appliances must be provided.	No such parts.	N/A
12	Controlled goods likely to be treated as toy by children	Controlled goods, having an enclosure, which is shaped and decorated so that it is likely to be treated as a toy by children, shall not be accepted for certification and registration.	The equipment is not treated as toy by children.	N/A
13	Controlled goods with rated voltage that are not suitable for local supply voltage	a) Controlled goods with rated voltage that are not suitable for local supply voltage will not be allowed for registration unless they are supplied with step-down isolating transformer and are tested together with the transformer as a complete set. b) A test to ensure that the controlled goods shut-down/fail safely should the consumer accidentally plugs the product directly into the 230 V mains supply socket outlet without using the isolating stepdown transformer shall be conducted.		N/A
Applicable to AC adaptor				
15	3-pin AC adaptor	Test report showing that the 3-pin complied with sub-clauses 12.1 & 12.3 of SS 246 must be submitted.	The power cord has not been checked, refer to Summary of Testing.	—
16	2-pin AC adaptor	The 2-pin (Appendix W) shall comply with IEC 83: 1975 (Standard C5, Version II) or EN 50075	The power supply cord has not been checked, see summary of testing.	—
17	Detachable power supply cord set not supplied by Registered Supplier	a) Registered Supplier who is not supplying the detachable power supply cord set together with the AC Adaptor must provide written instruction to its customer on the type of approved detachable power cord set to use and declare to Conformity Assessment Body when applying for Certificate of Conformity. b) This requirement is only applicable to Register Supplier whose core business is supplying AC Adaptor or its Registered Supplier name is affiliated	The power supply cord has not been checked, see summary of testing.	—

		with the AC Adaptor's manufacturer.		
18	AC Adaptor incorporated with 13A socket-outlet	Additional tests clauses to 13, 17 and 18 of SS 246 would be required.	The equipment provide AC inlet.	N/A
Applicable to computer products				
19	CD/DVD ROM (used in personal computer)	Test certificate showing that CD/DVD ROM has complied with IEC 825 must be provided.	The equipment does not consist of CD/DVD ROM.	N/A
20	Modem Card (used in personal computer)	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.	The equipment does not consist of Modem Card.	N/A
21	Powerline Ethernet Adaptor incorporated with 13A socket-outlet	Additional tests to clauses 13, 17 and 18 of SS 246 would be required.	Not used.	N/A
Applicable to plasma/LCD display monitor				
42	Plasma/LCD display monitor with TV tuner	Plasma/LCD display monitor tested to IEC 60950 would require additional test to clauses 9 (related to antenna only), 10.1, 10.2, 10.3 and 12.5 of IEC 60065.	No TV tuner provided.	N/A

IEC 60950-1:2005,Ed2,Am2			
Clause	Requirements – Test	Result – Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1,Ed2,Am2
United State NATIONAL DIFFERENCES
Information technology equipment – Safety –
Part 1: General requirements

Differences according to .....:	UL 60950-1,edition 2, Amendment 2
Attachment Form No. .....:	US_ND_IEC60950_1F
Attachment Originator.....:	TÜV SÜD Product Service GmbH
Master Attachment .....:	Date (2014-02)

	Special national conditions		
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.	Considered	—
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Must be evaluated when market in to country.	—
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.	No external interconnecting flexible cord and cable assemblies exceeding 3.05m provided.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.	No external interconnecting flexible cord.	N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Single phase only.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A

	A voltage rating is not to be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and “Class 2” or equivalent.	No connectors and field wiring terminal for external Class 2 or Class 3 circuits.	N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.	No such fuse.	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).	Considered.	P
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No special external branch circuit overcurrent devices provided.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	The equipment provide AC inlet.	N/A
3.2.1	Attachment plugs of power supply cords are rated not less than 125 per cent of the rated current of the equipment.	The equipment provide AC inlet.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements.	Not connection to DC mains supply.	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.	The equipment is not permanently connected to the mains.	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.	The power cord has not been checked.	N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected to the mains.	N/A

3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	The equipment provide AC inlet.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).	The equipment provide AC inlet.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are	The equipment provide AC inlet.	N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	Revise first column of Table 3E to “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”		N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	No such motor.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.	No switch acting as disconnect device	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No battery in the equipment.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquids within the equipment.	N/A
4.3.13.5.1	Equipment with lasers meet the U.S.Code of Federal Regulations 21 CFR 1040(and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser product used.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	The equipment has no combustible area greater than 0.76 m^3.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less.	The equipment has no combustible material greater than 0.9m^2 or single dimension greater than 1.8m.	N/A
	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
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	The equipment does not produce ionizing radiation	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, 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.	Critical components are IEC certified. See list of critical components in main CB report (§1.5.1). There may be additional requirements for components in US.	—
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.	Not connection to DC mains supply.	N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	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.	No TNV Circuit.	N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).	Considered.	P

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.	Considered.	P
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT.	No CRT used.	N/A
4.3.2	Equipment with handles complies with special loading tests.	No handle used.	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 comply with a special touch current measurement tests.	No TNV Circuitry.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded.	See table 5.3 in main test report.	P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV Circuitry.	N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.	No document/media shredders provide.	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.	No TNV circuit.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.	No TNV circuit.	N/A

ATTACHMENT: CHINESE DIFFERENCES
Test results according to CB BULLETIN

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;	Considered.	P
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	Considered.	P
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification,or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification,or 25 °C, whichever is greater. 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.	Considered.	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.	Only 2000m.	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.	Must be considered when market to China.	—

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.	Rated voltage include 220V single phase.	P
1.7.2.1	Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only 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 isintended to be used. 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 isintended to be used.	Must be considered when market to China.	—

2.7.1	Amended the first paragraph as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall beprovidedas 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.	Protective device is integrated in the equipment, see also Sub-clause 5.3.	P
2.9.2	First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40 ±2℃ and a relative humidity of (93± 3)%.During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for48 h in a cabinet or room containing air with a relative humidity of (93±3)%. Thetemperature of the air, at all places where samples can be located, is maintained within 2 °Cof any convenient value between 20 °C and 30 °C such that condensation does not occur. Due to pretreatment of equipment operated at highaltitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.	Must be considered when market to the country.	—

2.10.3.1	Amend the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level.Forequipment 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.Forequipment 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 ispermitted between the nearest two points in Table A.2. The calculated minimum CLEARANCEusing this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Considered.	P
2.10.3.3 & 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K、2L and 2M.	Considered.	P
2.10.3.4	Add a new sectionabove 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. Forequipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48corresponding altitude of 5000m given in Table A.2 of GB/T16935.1（ IEC 60664-1）. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.	Must be considered when market to China.	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.	AC inlet provided.	N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.	No such equipment.	N/A

Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annexwith the temperature limits of Table 4B, 35 °C shall be added to the calculated temperaturerise. 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.	Thermocouple measurement method	N/A
Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Must be considered when market to China.	N/A
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.	Considered.	P
Annex DD (normative)	Added annex DD:Instructions for thenew 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.	Must be considered when market to China.	N/A

Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese、Tibetan、Mongolian、ZhuangLanguage and Uighu.	Must be considered when market to the country.	—
Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.	Considered.	P

Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties toagreements based on this part are encouraged to investigate the possibilityof applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;	Considered.	P

	- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards,informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB4943.1-2011.		

ATTACHMENT: JAPANESE DIFFERENCES

to IEC 60950-1

Clause	Requirement - Test	Result - Remark	Verdict
1.2.4.1	Add the following new notes. Note: Even if the equipment is designed as Class I, the equipment is regarded as Class 0I equipment when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.	The equipment is provided with an appliance coupler withan earthing blade.	N/A
1.2.4.3A	Add the following new clause. 1.2.4.3A CLASS 0I EQUIPMENT Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by: - using BASIC INSULATION, and - providing externally an earth terminal or a lead wire for earthing 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. NOTE – Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation circuit.	Class I or II equipment.	N/A
1.3.2	Add the following notes after first paragraph: Note 1 Transportable or similar equipment that are relocated frequently for intended usage should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel. Note 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.	The equipment is provided with an appliance coupler withan earthing blade.	P

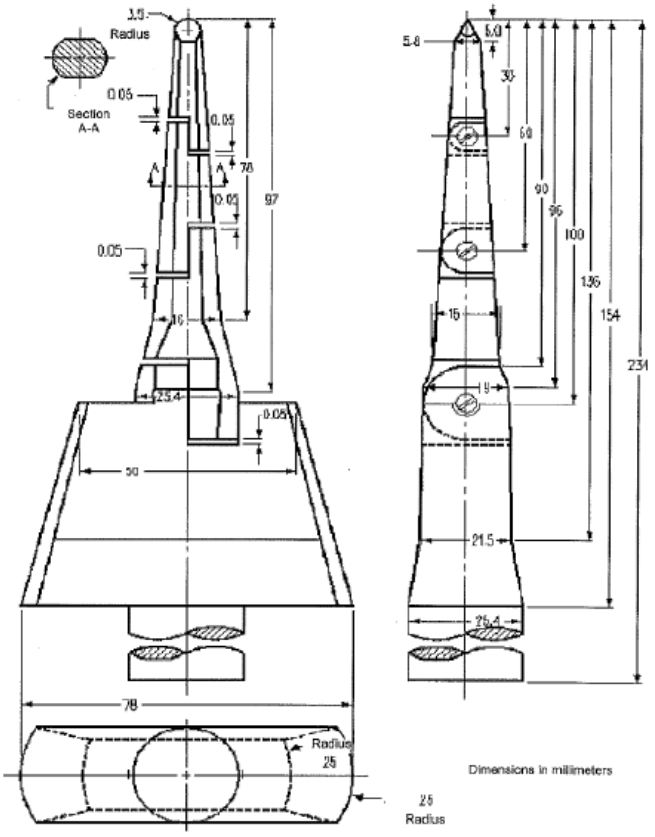
Clause	Requirement - Test	Result - Remark	Verdict
1.5. 1	Replace the first paragraph with the follows: Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standard, or IEC component standards in case there is no applicable JIS component standard is available. However, a component that falls within the scope of METI Ministerial ordinance No. 85 is properly used in accordance with its marked ratings, requirements of 1.5.4, 2.8.7 and 3.2.5 apply, and in addition, a cord connector of power supply cord set mating with appliance inlet complying with the standard sheet of IEC 60320-1, shall comply with relevant standard sheet of IEC 60320-1. Replace Note 1 with the following: Note 1 A JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope.	Considered.	P
1.5.2	Replace first sentence in the first dashed paragraph with the following: - a component that has been demonstrated to comply with a JIS component standard harmonized with the relevant IEC component standard, or where such JIS component standard is not available, a component that has been demonstrated to comply with the relevant IEC component standard shall be checked for correct application and use in accordance with its rating. Add a note after the first dashed paragraph as follows: Note 1 See 1.7.5A when Type C.14 appliance coupler rated 10 A per IEC 60320-1 is used with an equipment rated not more than 125 V and rated more than 10 A. Replace first sentence in the third dashed paragraph as follows: - where no relevant IEC component standard or JIS component standard harmonized with the relevant IEC component standard exists, or where components are used in circuits not in accordance with their specified rating, the components shall be tested under the conditions occurring in the equipment.	Considered.	P
1.7.1	Replace fifth dashed parapgaph with the following: - manufacturer's or responsible company's name or trade-mark or identification mark;	Considered.	P

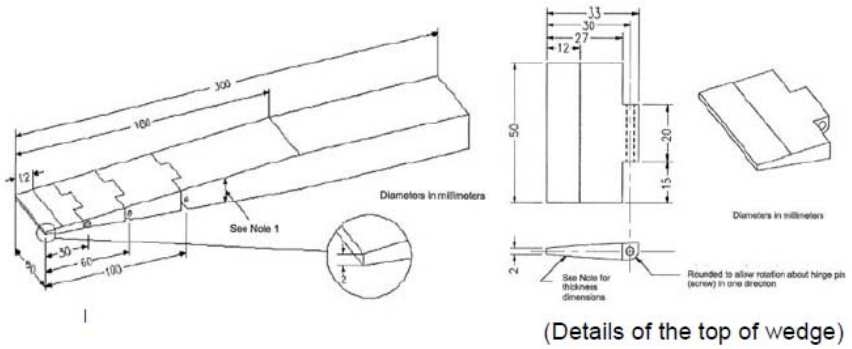
Clause	Requirement - Test	Result - Remark	Verdict
1.7.5A	Add the following new clause. after 1.7.5 1.7.5A Appliance Coupler If appliance coupler according to IEC60320-1, C.14(rated current: 10A)is used in equipment whose rated voltage is less than 125V and rated current is over 10A, the following instruction or equivalent shall be described in the user instruction. " Use only designated cord set attached in this equipment"	The rated current of AC inlet is less than 10A.	N/A
1.7.12	Replace first sentence with the following: Instructions and equipment marking related to safety shall be in Japanese.	Must be checked when market to Japan.	—
1.7.17A	Add the following new clause. after 1.7.17 1.7.17A Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following instruction shall be marked on the visible place of the mains plug or the main body: "Provide an earthing connection" Moreover, for CLASS 0I EQUIPMENT, the following or equivalent instruction shall be indicated on the visible place of the main body or written in the operating instructions: "Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains."	Class I or II equipment.	N/A
2.6.3.2	Add the following after 1st paragraph. This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.	Class I or II equipment.	N/A
2.6.4.2	Replace 1st paragraph with the following. Equipment required to have protective earthing shall have a main protective earthing terminal. For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal except for CLASS 0I EQUIPMENT providing separate main protective earthing terminal other than appliance inlet.	AC inlet provided.	P
2.6.5.4	Replace 1st sentence with the following. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:	AC inlet used.	N/A

Clause	Requirement - Test	Result - Remark	Verdict
2.6.5.8A	Add the following new clause. after 2.6.5.8A 2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.	Class I or II equipment.	N/A
3.2.3	Add the following after Table 3A: Table 3A applies when cables complying JIS C 3662 or JIS C 3663 are used. In case of other cables, cable entries shall be so designed that a conduit suitable for the cable used can be fitted.	The power cord has not been checked, see summary of testing.	—
3.2.5.1	Add the following to the last of first dashed paragraph. Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance. Add the following to the last of second dashed paragraph. Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance. Delete 1) in Table 3B	The power cord has not been checked, see summary of testing.	—
3.3.4	Add the following note to Table 3D: Note For cables other than those complying with JIS C 3662 or JIS C 3663, terminals shall be suitable for the size of the intended cables.	The power cord has not been checked, see summary of testing.	—
3.3.7	Add the following after the first sentence: This requirement is not applicable to the external earthing terminal of Class 0I equipment.	The equipment with AC inlet.	N/A
4.3.4	Add the following after the first sentence: This requirement also applies to those connections in Class 0I equipment, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.	Class I or II equipment.	N/A
5.1.3	Add a note after the first paragraph as follows: Note – Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, test is conducted using the test circuit from IEC 60990, figure 13.	Single phase connection.	N/A
5.1.6	Replacement: Replace Table 5A.		

<table>
<tr><th>Clause</th><th>Requirement - Test</th><th>Result - Remark</th><th>Verdict</th></tr>
<tr><td></td><td colspan="3">
<table>
<tr><th>Type of equipment</th><th>Terminal A of measuring instrument connected to:</th><th>Maximum TOUCH CURRENT mA r.m.s. [1)]</th><th>Maximum PROTECTIVE CONDUCTOR CURRENT</th></tr>
<tr><td>ALL equipment</td><td>Accessible parts and circuits not connected to protective earth</td><td>0,25</td><td>-</td></tr>
<tr><td>HAND-HELD</td><td rowspan="5">Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT</td><td>0,75</td><td>-</td></tr>
<tr><td>MOVABLE (other than HAND_HELD, but including TRANSPORTABLE EQUIPMENT</td><td>3,5</td><td>-</td></tr>
<tr><td>STATIONARY, PLUGGABLE TYPE A</td><td>3,5</td><td>-</td></tr>
<tr><td>ALL other STATIONARY EQUIPMENT
- not subject to the conditions of 5.1.7
- subject to the conditions of 5.1.7</td><td>3,5
-</td><td>-
5 % of input current</td></tr>
<tr><td>HAND-HELD</td><td rowspan="2">Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT</td><td>0,5</td><td>-</td></tr>
<tr><td>Others</td><td>1,0</td><td>-</td></tr>
<tr><td colspan="4">[1)] If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.</td></tr>
</table>
</td></tr>
<tr><td>7.2</td><td>Add the following after the paragraph:
However, the separation requirements and tests of 6.2.1 a), b) and c) do not apply to a CABLE DISTRIBUTION SYSTEM if all of the following apply:
− the circuit under consideration is a TNV-1 CIRCUIT; and
– the common or earthed side of the circuit is connected to the screen of the coaxial cable and to all accessible parts and circuits (SELV, accessible metal parts and LIMITED CURRENT CIRCUITS, if any); and
– the screen of the coaxial cable is intended to be connected to earth in the building installation.</td><td>No CDS and TNV circuit.</td><td>N/A</td></tr>
<tr><td>W.1</td><td>Replace second and third sentence in the first paragraph with the following:
This distinction between earthed and unearthed (floating) circuit is not the same as between CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and CLASS II EQUIPMENT. Floating circuits can exist in CLASS I EQUIPMENT or CLASS 0I EQUIPMENT and earthed circuits in CLASS II EQUIPMENT.</td><td>Considered.</td><td>P</td></tr>
</table>

Clause	Requirement - Test	Result - Remark	Verdict
Annex JA	Addition: Add a new annex with the following contents. Annex JA (normative) Document shredding machines Document shredding machines shall also comply with the requirements of this annex except those of STATIONARY EQUIPMENT used by connecting directly to an AC MAINS SUPPLY of three-phase 200V or more.	Not Document shredding machines.	N/A
JA.1	Markings and instructions In the easily visible part near the document-slot, by a method capable to make out clearly and not easily disappeared, and by easily understandable wording, shall indicate the symbol of;  and, also the following precautions for use; - that use by an infant/child may cause a hazard of injury etc.; - that a hand can be drawn into the mechanical section for shredding when touching the document-slot; - that clothes can be drawn into the mechanical section for shredding when touching the document-slot; - that hairs can be drawn into the mechanical section for shredding when touching the document-slot; in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas.	Not Document shredding machines.	N/A
JA.2	**Inadvertent reactivation** Any safety interlock which can be operated by means of the test finger, Figure JA.1, is considered to cause reactivation of the hazard. Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1.	Not Document shredding machines.	N/A
JA.3	**Isolating switch** 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. Compliance is checked by inspection.	Not Document shredding machines.	N/A

Clause	Requirement - Test	Result - Remark	Verdict
JA.4	**Protection in operator access areas** Any warning shall not be used instead of the structure for preventing access to hazardous moving parts. Document shredding machines shall comply with the following requirements. Push the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying additional force. It shall not be possible to touch hazardous moving parts with the test finger. The document shredding machine is installed as intended, and all face of MECHANICAL ENCLOSURES are subjected to this test. Before testing with the test finger, remove the parts detachable without a tool. Push 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 shall not influence the test. Before testing withy the test finger, 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.	Not Document shredding machines.	N/A
	 Figure JA.1 Test finger		N/A

Clause	Requirement - Test	Result - Remark	Verdict
	 (Details of the top of wedge)		N/A

Distance from the top	Thickness of probe
0	2
12	4
180	24

Note 1 - The probe shall be of changing the thickness linearly. However, the slope shall be changed at the respective points shown in the table.
Note 2 –The allowable dimensional tolerance of the probe is +/- 0.127 mm.

Figure JA.2 Wedge-probe

SI 60950 Part 1 (2009)			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT: NATIONAL DIFFERENCES – ISRAEL Test results according to Online CB BULLETIN (Last modified date of 2011-03-02)			
1.7	Marking and instructions The clause is applicable with the following additions: - Subclause 1.7.201 shall be added at the beginning of the clause as follows:		—
1.7.201	Marking in the Hebrew language The marking in the Hebrew language shall be in accordance with the Consumer Protection Order (Marking of goods), 1983. In addition to the marking required by claus e I.7.1, the following details shall be marked in the Hebrew language. The details shall be marked on the apparatus or on its package, or on a label properly attached to the apparatus or on the package, by bonding or sewing, in a manner that the label cannot be easily removed. 1. Name of the apparatus and it commercial designation; 2. Manufacturer's name and address. If the apparatus is imported, the importer's name and address; 3. Manufacturer's registered trademark, if any; 4. Name of the model and serial number, if any; 5. Country of manufacture.	Must be considered when market to Israel.	—
1.7.2	Safety instructions and Marking 1.7.2.1 General The following shall be added to the clause: All the instructions and warnings related to safety shall also be written in the Hebrew language.	Must be considered when market to Israel.	—
2.	Protection from Hazards The clause is applicable with the following additions:		P

SI 60950 Part 1 (2009)			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.4	Separation from hazardous voltages The following shall be added at the beginning of the clause : In Israel, according to the Electricity Law, 1954, and the Electricity Regulations (Earthing and means of protection against electricity of voltages up to 1,000V) 1991, seven means of protection against electrocution are permitted, as follows: 1) TN-S - Network system earthing; TN-C-S - Network system earthing; 2) TT - Network system earthing; 3) IT - Network Insulation Terre; 4) Isolated transformer; 5) Safety extra low voltage (SELV or ELV) ; 6) Residual current circuit breaker (30 rna =I△); 7) Reinforced insulation; Double insulation (class II) ⧈. Clause 2.201 shall be added at the end of the clause, as follows:	Adequate protection provide for isolated transformer, SELV, reinforced insulation and double insulation. Also refer below Cl.2.201.	—
2.201	Prevention of electromagnetic interference - Prior to carrying out the tests in accordance with the clauses of this Standard, the compliance of the apparatus with the relevant requirements specified in the appropriate part of the Standard series, SI 961, shall be checked. The apparatus shall meet the requirements in the appropriate part of the Standard series. SI 961. - If there are components in the apparatus for the prevention of electromagnetic interference, these components shall not reduce the safety level of the apparatus as required by this Standard.	Must be considered when market to Israel.	—
3.	Wiring, connections and supply The clause is applicable with the following additions:		—
3.2	Connection to a mains supply		—
3.2.1	Means of connection		—
3.2.1.1	Connection to an a.c. mains supply After the note, the following note shall be added: Note: In Israel, the feed plug shall comply with the requirements of Israel Standard 51 32 Part I.	The power supply cord not provided with equipment. See summary of testing of main report.	—
3.2.1.2	Connection to a d.c. mains supply At the end of the first paragraph, the following note shall be added: Note: At the time of issue of this Standard, there is no Israel Standard for connection accessories to d.c.	Not connect to DC mains supply.	N/A

SI 60950 Part 1 (2009)			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX P

Normative references

The annex is applicable with the following national deviations:

- The following Israel Standards have been inserted in place of some of the International Standards specifie d in this annex of the Standard, as follows:

The referenced International Standard	The substituted Israel Standard	Comments
IEC 60065: 2001	SI 250(A) - Safety requirements for mains operated electronic and related apparatus for household and similar **general use**	The Istael Standard, excluding national **deviations in it, is identical to the** Standard of the International Electrotechnical Commission, IEC 65:1985, including its amendments
IEC 60227 (all parts)	SI 473, all parts - Cables, cords and **insulated conductors for nominal** vaItage up to 1000 volt	-
IEC 60309 (all parts)	SI 1109, all parts - Plugs, socket-outlets and couplers for industrial **purposes**	SI 1109, part I and part 2, excluding **national deviations in them, are** identical to the Standards of the International Electrotechnical Commission IEC 60309-1-1999 and 1Ee 60309-2-1999, respectively.
IEC 60317 (all parts)	SI 1067 Part I – Self-fluxing **enamelled(B) round copper wires with** high mechanical properties	The Israel Standard is identical to the Standard of the International **Electrotechnical Commission** IEC 317-1 (1980)
	SI 1067 Part 2 – Self-fluxing **enamelled(B) round copper wires**	The Israel Standard is identical to the Standard of the International **Electrotechnical Commission** IEC 317-4 (1980)
	SI 1067 Part 3 - Self-fluxing **enamelled(B) round copper wires with a** temperature index of 180°	The Israel Standard is identical to the Standard of the International **Electrotechnical Commission** IEC 317-8 (1980)
IEC 60320 (all parts)	SI 60320 Part 1 - Appliance couplers for household and similar general **purposes: General requirements**	The Israel Standard, excluding national **deviations in it,** is identical to the Standard of the International **Electrotechnical Commission,** IEC 60320-1 (2001)
	SI 60320 Part 2.1 - Appliance couplers for household and similar general **purposes: Sewing machine couplers**	The Israel Standard, excluding national **deviations in it, is identical to the** Standard of the International **Electrotechnical Commission,** IEC 60320-2.1 (2000)
IEC 60320 (all parts)	SI 60320 Part 2.2 – Appliance couplers for household and similar general **purposes: Interconnection couplers** for household and similar equipment	The Israel Standard, excluding national **deviations in it, is identical to the** Standard of the International **Electrotechnical Commission,** IEC 60320-2.2 (1998)
	SI 60320 Part 2.3 - Appliance couplers for household and similar general **purposes: Interconnection couplers for** household and similar equipment Appliance coupler for household and similar general purposes: Appliance coupler with a degree of protection higher than IPXO	The Israel Standard, excluding national **deviations in it, is identical to the** Standard of the International **Electrotechnical Commission,** IEC 60320-2.3 (1998)

—

SI 60950 Part 1 (2009)			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX P

Continued

IEC 60730-1: 1999	SI 60730 Part] - Automatic electrical controls for household and similar use: **General requirements**	The Israel Standard, excluding national **deviations in it, is identical to the** Standard of the International **Electrotechnical Commission,** IEC 60730-1 (1999)
IEC 60825-1	SI 60825 Part I - Safety of laser products: Equipment classification, **requirements and user's guide**	The Israel Standard, excluding national **deviations in it, is identical to the** Standard of the International **Electrotechnical Commission,** IEC 60825-1 (2001).
IEC 60947-[: 2004	SI 60947 Part 1 - Low-voltage **switchgear and controlgear: General rules**	The Israel Standard, excluding national **deviations in it, is identical to** Standard of the International **Electrotechnical Commission,** IEC 60947-[(1999)
IEC 61058-1: 2000	SI 61058 Part I – Switches for **appliances: General requirements**	The Israel Standard, excluding national **deviations in it, is identical to the** Standard of the International Electrotechnical Commission, IEC 61058-1 (2001)
ISO 3864 (all parts)	SI 3864 Part 1 -Graphical symbols – Safety colours and safety signs: Design principles for safety signs in workplaces and public areas	The Israel Standard, excluding national **deviations in it, is identical to the** Standard of the International Electrotechnical Commission IEC 3864-1 (2002)

Notes

(A) This Standard will be replaced by SI 60065 - Audio, video and similar electronic apparatus – safety requirements - that excluding the national deviations indicated is identical to the Standard of the International Electrotechnical Commission IEC 60065 (2005).

(B) Not relevant to the translation.

B. Add the following to the clause:

Israel Standards

SI 32 Part 1.1 - Plugs and socket-outlets for household and s imilar purposes : Plugs andsocket-outlets for single phase up to l6A - Genera l requirements

SI 96 1, all parts - Electromagnetic compatibility

Israel documents

Electricity Law, 1954, its r egulations and revisions

Kovetz Takanot 4465 dated 1983-02-24, Consumer Protection Order (Marking of goods), 1983

—