



# CE LVD TEST REPORT

For  
Travel Charger

Model No.: a)4.2V, b)8.4V

Applicant : Dongguan cachong Electronic Technology Co., Ltd.  
2/F, Building 2, Dongsheng Building, Yongsheng Street,  
Sanlian Village, Dongguan City, Guangdong, China.

Manufacturer : Dongguan cachong Electronic Technology Co., Ltd.  
2/F, Building 2, Dongsheng Building, Yongsheng Street,  
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Report Number : GST131021679S-R1

Issued Date : June 02, 2020

Date of Report : June 02, 2020

**Note:**


1. The test data and result is based on the tested sample only.
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<b>TEST REPORT</b> <b>EN 60950-1</b> <b>Information Technology Equipment including-Safety</b> <b>Part 1: General equipments</b>	
Report reference No. ....	GST131021679S-R1
Testing laboratory .....	Global-Standard Testing Service Co., Ltd.
Location.....	Room 1505, Building B, Chuangxin Plaza, Pingshan Avenue, Pingshan District, Shenzhen, China
Applicant.....	Dongguan cachong Electronic Technology Co., Ltd.
Address:.....	2/F, Building 2, Dongsheng Building, Yongsheng Street, Sanlian Village, Dongguan City, Guangdong, China.
Manufacturer.....	Dongguan cachong Electronic Technology Co., Ltd.
Address:.....	2/F, Building 2, Dongsheng Building, Yongsheng Street, Sanlian Village, Dongguan City, Guangdong, China.
Standards.....	EN 60950-1:2006+A11:2009+A1:2010+A12:2011
Procedure deviation.....	N/A
Non-standard test method.....	N/A
Type of test equipment .....	Travel Charger
Trade mark.....	N/A
Model/Type designation.....	a)4.2V, b)8.4V
Rating.....	i/p: AC100-240V, 50/60Hz, 150mA or DC12-24V o/p: a)DC 4.2V, 600mA, b)DC8.4V, 600mA
Copyright blank test report:	Global-Standard Testing Service Co., Ltd.
Test item particulars:	N/A
Equipment mobility	Portable equipment
Operating Condition	Continuous
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	N.A.
Class of equipment	Class II equipment
Mass of equipment (Kg)	Approximately 0.062kg
Protection against ingress of water	IP20

<b>Possible test case verdicts :</b>	
test case does not apply to the test object	N(/A.)
test object does meet the requirement	P(ass)
test object does not meet the requirement	F(ail)

**Name and address of the testing laboratory :**


Global-Standard Testing Service Co., Ltd.  
 Room 1505, Building B, Chuangxin Plaza, Pingshan Avenue,  
 Pingshan District, Shenzhen, China

**Tested by :**  May 30, 2020  
 Signature Date

Evan Chen / Engineer  
 Name/title

**Reviewed by :**  June 02, 2020  
 Signature Date

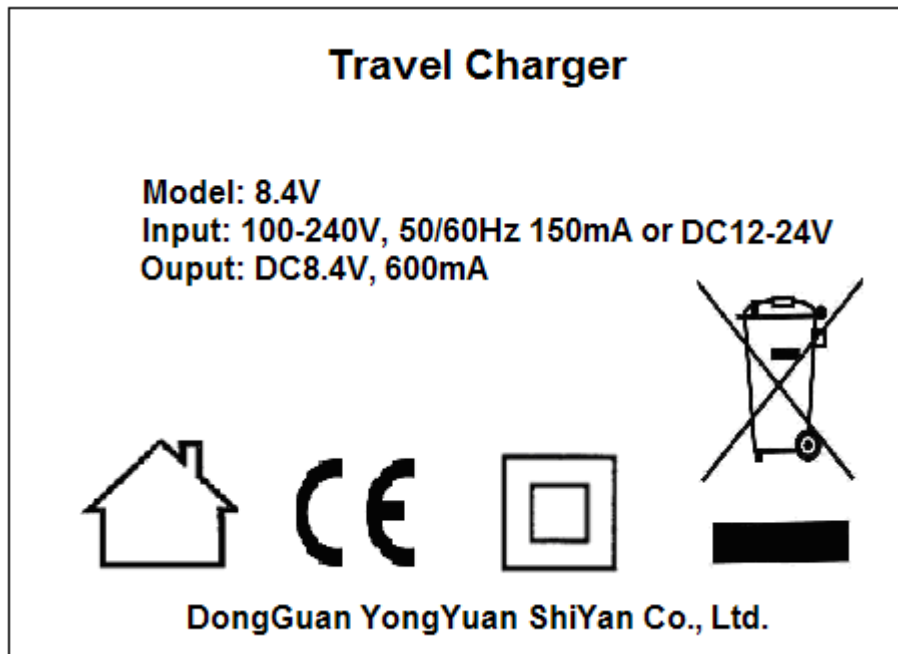
John Huang / Supervisor  
 Name/title

**Approved by :**  June 02, 2020  
 Signature Date



Nico Xie \*Manager  
 Name/title

<p><b>General remarks:</b></p> <p>“(see remark #)” refers to a remark appended to the report.</p> <p>“(see appended table)” refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>Until otherwise specified, all tests are done under normal ambient condition <math>25^{\circ}\text{C} \pm 10^{\circ}\text{C}</math>, Max RH: 75% and air pressure of 860 mbar to 1060 mbar.</p>	<p>Attached with:</p> <p>Attachment - A. Photo Documentation</p>
<p>The test samples were pre-production samples without serial numbers. This report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>The equipment with model 8.4V are Travel Charger used for used for DC supply</p> <p>The maximum ambient is <math>40^{\circ}\text{C}</math>.</p> <p>the equipment’s top enclosure is secured to bottom enclosure by the ultrasonic weld.</p> <p>The test result presented in this report relate only to the object tested. The samples tested comply with the requirements of this standard.</p> <p>This report is based on report GST131021679S which issued on October 23, 2013.</p>	



Remark:

- The above copy of marking plate as an example for the 8.4V, All the other models will have the same marking plate except the difference of model number, input connection method and output rating only.

-The above markings are the minimum requirements required by the safety standard. For the final productions samples, the additional markings which do not give rise to misunderstanding may be added.

-The dimension for height of CE mark is at least 5mm height and the height of WEEE directive mark is at least 7mm height.

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

1	GENERAL		P
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1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	Transformers 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		P
1.5.6	Capacitors bridging insulation		N/A
1.5.7	Resistors bridging insulation	No such resistors	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors		P
1.5.9.1	General		P
1.5.9.2	Protection of VDRs		P
1.5.9.3	Bridging of function insulation by a VDR		P
1.5.9.4	Bridging of basic insulation by a VDR	No such construction	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such construction	N/A

1.6	Power interface		P
1.6.1	AC power distribution systems		P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment	N/A
1.6.4	Neutral conductor	The neutral conductor is regarded as line conductor	P

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

1.7	Marking and instructions		P
1.7.1	Power rating	See below	P
	Rated voltage(s) or voltage range(s) (V) .....	AC100-240V	P
	Symbol for nature of supply, for d.c. only.....	Mains from AC source	N/A
	Rated frequency or rated frequency range (Hz) ..	50/60Hz	P
	Rated current (mA or A) .....	0.15A	P
	Manufacturer's name or trademark or identification mark .....	See copy of marking label	P
	Type/model or type reference.....	See copy of marking label	P
	Symbol for Class II equipment only .....	Double square symbol provided.	P
	Other marking and symbols .....	See copy of marking label	P
1.7.2	Safety instructions and marking	Operating Instructions provided to the operator, containing necessary instructions and caution information. English version checked.	P
1.7.2.1	General	"User Manual" provided that contains information regarding the maximum ambient temperature	P
1.7.2.2	Disconnect device	Direct plug-in equipment	N/A
1.7.2.3	Overcurrent protective device	Direct plug-in equipment	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool	No operator accessible area that needs to be accessed by the use of a tool	N/A
1.7.2.6	Ozone	Not such equipment	N/A
1.7.3	Short duty cycles	Continuous operation.	N/A
1.7.4	Supply voltage adjustment .....		N/A
	Methods and means of adjustment; reference to installation instructions .....		N/A
1.7.5	Power outlets on the equipment .....	No standard power outlet	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....		N/A
1.7.7	Wiring terminals	See below.	N/A
1.7.7.1	Protective earthing and bonding terminals .....	Class II equipment	N/A
1.7.7.2	Terminal for a.c. mains supply conductors	Direct plug-in equipment	N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
1.7.7.3	Terminals for d.c. mains supply conductors	No d, c mains supply	N/A
1.7.8	Controls and indicators	No safety related switches or indicators.	N/A
1.7.8.1	Identification, location and marking .....		N/A
1.7.8.2	Colours .....		N/A
1.7.8.3	Symbols according to IEC 60417.....		N/A
1.7.8.4	Markings using figures .....		N/A
1.7.9	Isolation of multiple power sources .....	Only one supply from the mains.	N/A
1.7.10	Thermostats and other regulating devices	No such components provided.	N/A
1.7.11	Durability		P
1.7.12	Removable parts	No removable part.	N/A
1.7.13	Replaceable batteries	No battery provided	N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations	Not intended for use in restricted access locations	N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	No access with test finger and test pin to any parts with only basic insulation to ELV or hazardous voltage.	P
2.1.1.1	Access to energized parts	See above	P
	Test by inspection .....	See above	P
	Test with test finger .....	See above	P
	Test with test pin .....	See above	P
	Test with test probe .....	See above	P
2.1.1.2	Battery compartments .....	No TNV circuits.	N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance (mm) through insulation		—
2.1.1.4	Access to hazardous voltage circuit wiring	Not accessible to operator.	N/A
2.1.1.5	Energy hazards .....	No energy hazard. (see appended table 2.1.1.5)	P
2.1.1.6	Manual controls	No manual controls	N/A
2.1.1.7	Discharge of capacitors in equipment		N/A



EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

	Measured voltage (V);time-constant(s).....:	(see appended table 2.1.1.7)	—
2.1.1.8	Energy hazards-d.c.mains supply	Connected to a.c mains.	N/A
	a)Capacitor connected to the d.c.mains supply....:		N/A
	b)Internal battery connected to the d.c,mains supply.....:		N/A
2.1.1.9	Audio amplifiers.....:	Not such equipment	N/A
2.1.2	Protection in service access areas	No operator accessible area that needs to be accessed by the use of a tool.	N/A
2.1.3	Protection in restricted access locations	Not intended to be installed in a restricted access location.	N/A

2.2	SELV circuits		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V).....:		P
2.2.3	Voltages under fault conditions (V).....:		P
2.2.4	Connection of SELV circuits to other circuits.....:	See 2.2.2 and 2.2.3.	P

2.3	TNV circuits		N/A
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
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed.....:		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed.....:		—
2.3.5	Test for operating voltages generated externally		N/A

2.4	Limited current circuits		P
2.4.1	General requirements	(see appended table 2.4.2)	P
2.4.2	Limit values	(see appended table 2.4.2)	P
	Frequency (Hz).....:		—

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

	Measured current (mA).....:	See appended table 2.4.2	—
	Measured voltage (V).....:	See appended table 2.4.2	—
	Measured circuit capacitance (Nf or $\mu$ F).....:		—
2.4.3	Connection of limited current circuits to other circuits	The limited current circuit is supplied from SELV circuits	P

2.5	Limited power sources		P
	a)Inherently limited output		N/A
	b)Impedance limited output		N/A
	c)Regulating network limited output under normal operating and single fault condition	See appended table 2.5	P
	d)Overcurrent protective device limited output		N/A
	Max output voltage (V), max.output current (A), max.apparent power (VA).....:	See appended table 2.5	—
	Current rating of overcurrent protective device (A)		—

2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	Class II equipment	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG.....:		—
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG.....:		—
	Protective current rating(A), cross-sectional area(mm <sup>2</sup> ), AWG.....:		N/A
2.6.3.4	Resistance ( $\Omega$ ) of earthing conductors and their terminations, resistance( $\Omega$ ) voltage drop(V) test current (A), duration(min).....:		N/A
2.6.3.5	Colour of insulation.....:		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

	Rated current (A), type and nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	No TNV	N/A

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	The built-in device fuse provides overcurrent protection. Pluggable equipment type A Equipment relies on 16A rated fuse or circuit breaker of the building installation for short circuit and earth fault.	P
	Instructions when protection relies on building installation	Pluggable equipment type A Instruction regarding socket outlet provided in manual.	P
2.7.2	Faults not simulated in 5.3.7	Considered.	P
2.7.3	Short-circuit backup protection	Pluggable equipment type A, the building installation is considered as providing short circuit protection. Additionally verification by short / abnormal tests	P
2.7.4	Number and location of protective devices ..... :	Single-phase; one fuse is located in primary circuit.	P
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel..... :		N/A

2.8	Safety interlocks		N/A
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EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

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
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) .....		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning	Humidity treatment conducted for 48h.	P
	Relative humidity (%),temperature (°C) :	93%R.H, 30°C	—
2.9.3	Grade of insulation	Kind of insulation and working voltage considered.	P
2.9.4	Separation from hazardous voltages	The secondary circuit is from hazardous voltages by reinforce insulation.	P
	Method(s) used.....	Method 1 used.	—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	Adequate dimensioning confirmed. Overvoltage category I used to determine clearances in secondary circuits.	P
2.10.1.1	Frequency.....		P
2.10.1.2	Pollution degrees.....	2	P
2.10.1.3	Reduced values for functional insulation	See 5.3.4	N/A
2.10.1.4	Intervening unconnected conductive parts	No such part	N/A
2.10.1.5	Insulation with varying dimensions	No such transformer used	N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
2.10.1.6	Special separation requirements	No TNV	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit	N/A
2.10.2	Determination of working voltage	The r.m.s. and the peak voltages were measured.	P
2.10.2.1	General	See above	P
2.10.2.2	RMS working voltage		P
2.10.2.3	Peak working voltage		P
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General	Comply with 2.10.3.1 and 2.10.3.2, Annex G not applied.	P
2.10.3.2	Mains transient voltages	See below	P
	a)AC mains supply .....	Normal transient voltage considered(See appended table 2.10.3 and 2.10.4)	P
	b)Earthed d.c.mains supplies.....	AC mains	N/A
	c)Unearthed d.c.mains supplies .....		N/A
	d)Battery operation .....		N/A
2.10.3.3	Clearances in primary circuits	Annex F and minimum clearances considered.(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	See 5.3.4	P
2.10.3.5	Clearances in circuits having starting pulses	No such circuit	N/A
2.10.3.6	Transients from a.c.mains supply.....	See 2.10.3.2	N/A
2.10.3.7	Transients from d.c.mains supply.....		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems.....	No TNV circuit	N/A
2.10.3.9	Measurement of transient voltage levels	See 2.10.3.6	N/A
	a)Transients from a mains supply		N/A
	For an a.c.mains supply.....		N/A
	For an d.c.mains supply.....		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	See below	P
2.10.4.1	General	(see appended table 2.10.3 and 2.10.4)	—
2.10.4.2	Material group and comparative tracking index		P

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
	CTI test .....	CTI rating for all materials of min.100.	P
2.10.4.3	Minimum creepage distance	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		P
2.10.5.1	General	See below	P
2.10.5.2	Distances through insulation	Enclosure provided(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No such component	N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5	Cemented joints	No such construction	N/A
2.10.5.6	Thin sheet material-General		P
2.10.5.7	Separable thin sheet material	See above	P
	Number of layers (pcs)		—
2.10.5.8	Non-separable thin sheet material	Not such material	N/A
2.10.5.9	Thin sheet material- standard test procedure		P
	Electric strength test		—
2.10.5.10	Thin sheet material- alternative test procedure		N/A
	Electric strength test		—
2.10.5.11	Insulation in wound components	Approved source of triple insulated wire used in transformer secondary winding for reinforced insulation	P
2.10.5.12	Wire in wound components	See above	P
	Working voltage.....:	250Vrms, 495VPeak	P
	a)Basic insulation not under stress		N/A
	b)Basic,supplementary,reinforced insulation		N/A
	c)Compliance with Annex U.....:	Approved source of triple insulated wire used in transformer secondary winding for reinforced insulation	P
	Two wires in contact inside wound component;angle between 45°C and90°C	By insulation tape	P
2.10.5.13	Wire with solvent-based enamel in wound components	No such construction	N/A
	Electric strength test		—
	Routine test		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
2.10.5.14	Additional insulation in wound components	No such construction	N/A
	Working voltage .....		N/A
	-Basic insulation not under stress.....		N/A
	Supplementary, reinforced insulation .....		N/A
2.10.6	Construction of printed insulation	See below	N/A
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.2	Coated printed boards	No coated printed boards.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	No multi-layer PCBs provided	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	No multi-layer PCBs provided	N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs).....		N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	P
2.10.8	Tests on coated printed boards and coated components	No such boards and components	N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for pollution degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts	No hermetically sealed component	N/A

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Sufficient cross sectional area of internal wiring.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges and heat sinks that could damage the insulation and cause hazard.	P

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
3.1.3	Securing of internal wiring	Internal wires with basic insulation are routed so that they are not close to any live bare components. Wires are adequately fixed to prevent excessive strain or damage of the conductors' insulation.	P
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. (see appended table 5.2)	P
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	All conductors are reliable secured.	P
	10 N pull test	Force of 10N applied to the termination points of the conductors.	P
3.1.10	Sleeving on wiring		P

3.2	Connection to a mains supply		N/A
3.2.1	Means of connection .....		N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits .....		—

3.2.4	Appliance inlets		P
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type.....		N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG.....		—
3.2.5.2	DC power supply cords		N/A



EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

3.2.6	Cord anchorages and strain relief	No power cord	N/A
	Mass of equipment (kg), pull (N) .....		—
	Longitudinal displacement (mm) .....		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) .....		—
	Radius of curvature of cord (mm).....		—
3.2.9	Supply wiring space	Not permanent connection or non-detachable power cord type	N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ).....		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm) .....		—
3.3.6	Wiring terminals 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		N/A
3.4.1	General requirement		N/A
3.4.2	Disconnect devices	Direct plug-in plug	N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized	there are not remaining parts at hazardous voltage.	N/A
3.4.5	Switches in flexible cords	No flexible cords	N/A
3.4.6	Number of poles-single-phase and d.c. equipment	Plug disconnects both poles simultaneously	N/A
3.4.7	Number of poles-three-phase equipment	Single phase equipment	N/A
3.4.8	Switches as disconnect devices		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	N/A
3.4.11	Multiple power sources	Only one supply connection provided.	N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements	SELV circuits to SELV circuits	P
3.5.2	Types of interconnection circuits..... :	SELV circuits	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	N/A
3.5.4	Data ports for additional equipment	No such ports	N/A

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	Stable mechanical construction, equipment does not overbalance when tilted to an angle of 10° from its normal upright position.	P
	Test: force (N).....:	Not a floor-standing unit.	N/A

4.2	Mechanical strength		P
4.2.1	General	See below. After tests, unit comply with 2.1.1, 2.6.1, 2.10 and 4.4.1	P
4.2.2	Steady force test, 10 N	Applied to relevant parts, no hazard.	P
4.2.3	Steady force test, 30 N	No internal enclosure	N/A
4.2.4	Steady force test, 250 N	250N applied to outer enclosure. No enery or other hazards.	P
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height(mm).....:	No hazard as result from drop test	P
4.2.7	Stress relief test	After 7h at 71°C and cooling down to room temperature, no shrinkage, distortion or losing of enclosure parts was noticeable on the unit.	P

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

4.2.8	Cathode ray tubes	No CRT provided	N/A
	Picture tube separately certified.....:		N/A
4.2.9	High pressure lamps	No high pressure lamps provided	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ....:	Direct plug-in equipment	N/A

4.3	Design and construction		P
4.3.1	Edges and corners	All edges and corners are rounded and / or smoothed.	P
4.3.2	Handles and manual controls; force (N).....:	No such part	N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress.	P
4.3.5	Connection of plugs and sockets	In operator and service areas, mismatching prevented by incompatible form or location.	P
4.3.6	Direct plug-in equipment		P
	Torque.....:	$0.02\text{Nm} \leq 0.25\text{Nm}$	—
	Compliance with the relevant mains plug standard.....:		P
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		N/A
	-Overcharging of a rechargeable battery		N/A
	-Unintentional charging of a non-rechargeable battery		N/A
	-Reverse charging of a rechargeable battery		N/A
	-Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation not in contact with oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	N/A
4.3.11	Containers for liquids or gases	No container for liquid or gas.	N/A
4.3.12	Flammable liquids.....:	No flammable liquids present.	N/A
	Quantity of liquid (l).....:		N/A
	Flash point (°C).....:		N/A
4.3.13	Radiation .....	No radiation hazards.	N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation	No ionizing radiation.	N/A
	Measured radiation (pA/kg) .....		—
	Measured high-voltage (kV) .....		—
	Measured focus voltage (kV) .....		—
	CRT markings .....		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No ultraviolet (UV) radiation.	N/A
	Part, property, retention after test, flammability classification .....		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....		N/A
4.3.13.5	Laser (including LEDs)	No laser.	N/A
	Laser class .....		—
4.3.13.6	Other types .....		N/A

4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No hazardous moving part	N/A
4.4.2	Protection in operator access areas		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A

4.5	Thermal requirements		P
4.5.1	General	See below	P
4.5.2	Temperature tests	(see appended table 4.5.2)	P
	Normal load condition per Annex L.....	(see appended table 1.6.2)	—
4.5.3	Temperature limits for materials	(see appended table 4.5.2)	P
4.5.4	Touch Temperature limits	(see appended table 4.5.2)	P
4.5.5	Resistance to abnormal heat.....	(see appended table 4.5.5)	P

4.6	Openings in enclosures		N/A
4.6.1	Top and side openings		N/A
	Dimensions (mm) .....		—
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom, dimensions (mm).....		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm).....:		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks).....:		—
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Materials with the required flammability classes are used. Safety relevant components used within their specified rating. Electrical parts are not likely to ignite nearby materials. Temperatures see 4.5.2.	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	See below.	N/A
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	Parts were mounted on V-1 or better PCB Materials with the required flammability classes are used.	P
4.7.3.2	Materials for fire enclosures	Fire enclosure is V-0 material.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	No part outside fire enclosure.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2, HF-2 or better. Insulating material consists of PVC.	P
4.7.3.5	Materials for air filter assemblies	No air filters provided.	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components provided.	N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
5.1.1	General	Measurement circuit according to annex D used as described in cl. 5.1.2 to 5.1.7	P
5.1.2	Configuration equipment under test (EUT)	EUT has only one mains connection	P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connection to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connection to an a.c. mains supply		N/A
5.1.3	Test circuit	Per figure 5A.	P
5.1.4	Application of measuring instrument	Per Annex D.	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V) .....	(see appended table 5.1.6)	—
	Measured touch current (mA) .....	(see appended table 5.1.6)	—
	Max. allowed touch current (mA) .....	0.25mA	—
	Measured protective conductor current (mA) ....		—
	Max. allowed protective conductor current (mA):.		—
5.1.7	Equipment with touch current exceeding 3.5 mA :		N/A
5.1.7.1	General.....		N/A
5.1.7.2	Simultaneous multiple connection to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No TNV	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N/A
	Supply voltage (V) .....		—
	Measured touch current (mA) .....		—
	Max. allowed touch current (mA) .....		—
5.1.8.2	Summation of touch currents from telecommunication networks.....		N/A
	a)EUT with earthed telecommunication ports.....		N/A
	b) EUT whose telecommunication ports have no reference to protective earth.....		N/A
5.2	Electric strength		P

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

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		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		N/A
5.3.3	Transformers	Adequate protection against overload provided. (see appended Annex C)	P
5.3.4	Functional insulation..... :	Short circuit tests. (see appended table 5.3)	P
5.3.5	Electromechanical components	Not provided.	N/A
5.3.6	Audio amplifiers in ITE..... :	No such component	N/A
5.3.7	Simulation of faults	Results see appended table 5.3	P
5.3.8	Unattended equipment	None of the listed components was provided	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	No fire propagated beyond the equipment. No molten metal was emitted.	P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P

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

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

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
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
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples.....:		—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C).....:		N/A
A.1.3	Mounting of samples.....:		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D .....		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A



EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
A.2.1	Samples, material.....:		—
	Wall thickness (mm).....:		—
A.2.2	Conditioning of samples		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 60695-2-2, cl. 4 and 8		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		N/A
	Position .....	(see appended table 1.5.1)	—
	Manufacturer .....	(see appended table 1.5.1)	—
	Type .....	(see appended table 1.5.1)	—
	Rated values .....	(see appended table 1.5.1)	—
B.2	Test conditions		N/A
B.3	Maximum temperatures	(see appended table 5.3)	N/A
B.4	Running overload test	(see appended table 5.3)	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.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
B.7.1	Test procedure	(see appended table 5.3)	N/A
B.7.2	Alternative test procedure; test time (h)..... :		N/A
B.7.3	Electric strength test	(see appended table 5.2)	N/A
B.8	Test for motors with capacitors	(see appended table 5.3)	N/A
B.9	Test for three-phase motors	(see appended table 5.3)	N/A
B.10	Test for series motors		N/A
	Operating voltage (V) .....		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position .....		—
	Manufacturer .....		—
	Type .....	--	—
	Rated values .....		—
	Method of protection..... :		—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended table 5.2)	P
	Protection from displacement of windings..... :	Fixed by insulation tape, margin tape and tube.	P
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		N/A
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	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	DC mains supply		N/A
G.3	Determination of telecommunication network transient voltage (V)..... :		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
G.4	Determination of required withstand voltage (V) :		N/A
G.5	Measurement of transient levels (V).....:		N/A
G.6	Determination of minimum clearances.....:		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal used .....	stainless steel	—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		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	(see appended table 5.3)	N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringling signal		N/A
M.3.1.1	Frequency (Hz) .....		—
M.3.1.2	Voltage (V) .....		—
M.3.1.3	Cadence; time (s), voltage (V) .....		—
M.3.1.4	Single fault current (mA).....:		—

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
M.3.2	Tripping device and monitoring voltage..... :		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)..... :		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 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		P
Q	ANNEX Q, BIBLIOGRAPHY		N/A
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
			—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power distribution systems		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		P
W.1	Touch current from electronic circuits		P
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)		P
X.1	Determination of maximum input current		P
X.2	Overload test procedure		P

Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus .....		N/A
Y.2	Mounting of test samples .....		N/A
Y.3	Carbon-arc light-exposure apparatus .....		N/A
Y.4	Xenon-arc light exposure apparatus .....		N/A

Annex ZA	Replace the current Annex ZA Normative references to international publications with their corresponding European publications(60950-1 2006+A11:2009 clause)		N/A
Annex ZB	Change the existing special national conditions as follows: (60950-1 2006+A11:2009 clause)		N/A
1.1.1	NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies. (60950-1 2006+A1:2010 clause)		N/A
1.2.3	PORTABLE SOUND SYSTEM (60950-1 2006+A1:2010 clause)		N/A
	whose prime purpose is to listen to recorded or broadcasted sound;		N/A
	that uses headphones or earphones that can be worn in or on or around the ears;		N/A
	that allows the user to walk around		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
1.2.13.14	In Norway and Sweden, for requirements see 1.7.2.1 and 7.3 of this annex. (60950-1 2006+A11:2009 clause)		N/A
1.5.7.1	Replace the existing SNC by the following: 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. (60950-1 2006+A11:2009 clause)		N/A
1.7.2.1	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)." Translation to Norwegian (the Swedish text will also be accepted in Norway): (see standard) Translation to Swedish: (see standard) (60950-1 2006+A11:2009 clause)		N/A

EN 60950-1			
Clause	Requirement	Result - Remark	Verdict
	In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause: 1. If this insulation is solid, including insulation forming part of a component, 2. there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, (60950-1 2006+A1:2010 clause6.1.2.1)		N/A
	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. (60950-1 2006+A1:2010 clause)		N/A
1.7.5	Add the following paragraph to the existing SNC for Denmark: For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a. (60950-1 2006+A11:2009 clause)		N/A
4.3.13.6	NOTE Z1 Attention is drawn to :1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC. (60950-1 2006+A1:2010 clause)		N/A
7.3	Delete the existing SNC for Norway and Sweden (based on NOTE 1 of IEC 60950-1:2005 + corr. 1). Add as new SNC (based on future NOTE 3 of IEC 60950-1:200X): In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex. (60950-1 2006+A11:2009 clause)		N/A
Annex ZC	With below modification (60950-1 2006+A11:2009 clause)		N/A
1.5.1	Sweden (Ordinance 1990:944) Delete		N/A
1.7.2.1	Denmark (Heavy Current Regulations) Delete		N/A
1.7.5	Denmark (Heavy Current Regulations) Delete		N/A
5.1.7.1	Denmark (Heavy Current Regulations, Chapter 707, clause 707.4) Delete		N/A

<b>TABLE 1.5.1</b>		<b>List of critical components and materials</b>		
Component	manufacturers / trademark	Type / model	Value / rating	Approval/ Reference
Enclosure Material	Sabic Lnnovative Plastics US LLC	940(f1)	PC;V-0:120°C,1.5mm min. thickness	UL
AC Inlet	ZHE JIANG BEI ER JIA Electronic	ST-A03-005	250V. 2.5A	VDE
Internal lead wire	Shen Zhen Hengdian Electric Co Ltd	1007,	VW-1, Min.24AWG, 80°C, 300V.	UL
PCB	Kingboard Laminates Holdings Ltd	KB-3151S	V-0 130° C	UL
Fuse (F1)	Shenzhen Lanson	3N	10 Ω	--
Optocoupler (PC617)	Shenzhen Orient Components Co Ltd	ORPC-817	Insulation voltage:850Vpeak;100°C	VDE
Heat-shrinkable tube	Dongguan Quantai Industrial Co Ltd	T-2	VW-1, 600V, 125°C	UL
Transformer (T1)	Dongguan cachong Electronic Technology Co., Ltd.	BCK2001-011 for	Class B	Tested in the equipment
Components used in Transformer:				
Bobbin for transformer	Chang Chun Plastics Co Ltd	T375J	PMC;V-0; 150° C	UL
Magnet Wire for transformer	Dong Guan Yida Industrial Co Ltd	*UEW/155 or QA-*/155	155°C	UL
Triple insulated wire for transformer	Great Leoflon Industrial Co Ltd	TRW(B)Serie(s)	Insulation voltage: 1000Vpeak max.;Class B	VDE
Insulation tape inside transformer	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	PF	Polimide film tape;180°C	UL
Teflon tube inside transformer	Changyuan Electronics (Shenzhen) Co Ltd	CB-TT-S	PTFE not-heat-shrinkable tubing;600V;200°C	UL
Varnish for transformer	Hang Cheung Petrochemical Ltd	8562(a)	HC;155°C	UL



1.6.2 TABLE: electrical data (in normal conditions)						P
fuse #	I <sub>rated</sub> (A)	U (V)	P (W)	I (A)	I <sub>fuse</sub> (A)	condition/status
--	--	90Va.c./50Hz	7.2	0.082	0.082	Max. Normal Load
--	--	90Va.c./60Hz	7.4	0.084	0.084	Max. Normal Load
F1	0.15	100Va.c./50Hz	7.3	0.075	0.075	Max. Normal Load
F1	0.15	100Va.c./60Hz	7.4	0.076	0.076	Max. Normal Load
F1	0.15	240Va.c./50Hz	7.2	0.053	0.053	Max. Normal Load
F1	0.15	240Va.c./60Hz	7.3	0.054	0.054	Max. Normal Load
--	--	264Va.c./50Hz	7.4	0.054	0.054	Max. Normal Load
--	--	264Va.c./60Hz	7.4	0.055	0.055	Max. Normal Load

2.1.1.5 TABLE: max. V, A, VA test					P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (mA)	VA (max.) (VA)	
8.4	600	8.92	600	5.4	
Supplied by AC253V 60Hz					

2.2.2 TABLE: Hazardous voltage measurement					P
Transformer	Location	max. Voltage		Voltage Limitation Component	
		V peak	V d.c.		
Transformer	Pin sec	12.3V	--	--	
--	--	--	8.4	After Diode D7	

2.2.3 TABLE: SEL voltage measurement			N/A
Location	Voltage measured (V)	Comments	
Output terminal	--	--	
Note:			

2.5 TABLE: limited power source measurement				P
	Limits	Measured	Verdict	
U <sub>oc</sub> =5.47V (measured under no load conditions)				
	Limits	Measured	Verdict	
According to Table 2B with the max. load conditions				

current (in A)	$\leq 8$	600mA	P
power (in VA)	$\leq 100$	5.4W	P
According to Table 2B with Optocoupler (Pin 2) open-circuited:			
current (in A)	$\leq 8$	0A	P
power (in VA)	$\leq 100$	0W	P
According to Table 2B with Optocoupler (Pin 1-2) short-circuited:			
current (in A)	$\leq 8$	0A	P
power (in VA)	$\leq 100$	0W	P
According to Table 2B with Optocoupler (Pin 3-4) short-circuited:			
current (in A)	$\leq 8$	0A	P
power (in VA)	$\leq 100$	0W	P
Note: test voltage: 264Vac, 60Hz			

2.6.3.4	TABLE: ground continue test			N/A
Location	Resistant measured (W)	Comments		
From earthing terminal to casing				
Note: --				

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					P
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
L to N before fuse F1, on PCB	340	240	2.0	2.56	2.5	2.56
Primary to secondary circuit under opto-coupler U2 (Reinforced)	376	243	4.0	6.7	5.0	6.7
core to secondary circuit under transformer on PCB (Reinforced)	520	250	4.4	7.7	5.0	7.7
core to secondary pins inside transformer (Reinforced)	520	250	4.4	5.2	5.0	5.2
Primary to accessible surface (Reinforced)	520	250	4.4	5.0	5.0	5.0

2.10.5	TABLE: distance through insulation measurements			P	
	distance through insulation di at/of:	Up (V)	test voltage (V)	required dti (mm)	dti (mm)
	Enclosure (Reinforced)	520	3000 ac	0.4	1.92
	opto-coupler (Reinforced)	520	3000 ac	0.4	1)
Remark: 1) further details are provided in table 1.5					

4.5	TABLE: maximum temperatures			P
	test voltage (V) .....	90V/60Hz	264V/50Hz	—
	t <sub>amb1</sub> (°C) .....	40.0	40.0	—
	t <sub>amb2</sub> (°C) .....	--	--	—
	maximum temperature T of part/at::	T (°C)	T (°C)	allowed T <sub>max</sub> (°C)
	AC plug	53.0	48.9	70
	Internal wire(L/N)	72.6	58.1	80
	PCB near diode	93.4	67.8	130
	Ripple Capacitor (C3)	95.9	73.8	105
	Optocoupler	78.4	72.6	100
	Winding of transformer (T1)	106.1	94.4	110
	Core of transformer (T1)	97.3	88.6	110
	PCB near D7	90.6	89.7	130
	Ripple Capacitor (C9)	75.6	75.1	105
	Enclosure near T1 (inside)	82.3	74.0	95
	Enclosure near T1 (outside)	67.3	62.6	95
Supplementary information: The maximum ambient temperature permitted by the manufacturer's specification T <sub>ma</sub> =40°C				

4.5.5	TABLE: ball pressure test of thermoplastic parts		P
	allowed impression diameter (mm) .....	≤ 2 mm	—
	part	test temperature (°C)	impression diameter (mm)
	PCB	125	1.36
	Transformer bobbin	125	0.7
	Enclosure	125	0.9


5.2	TABLE: electric strength tests, impulse tests and voltage surge tests		P
test voltage applied between:		test voltage (V) a.c. / d.c.	breakdown Yes / No
L and N		1500Vac	No
L/N and accessible area		3000Vac	No
L/N and output		3000Vac	No
supplementary information			

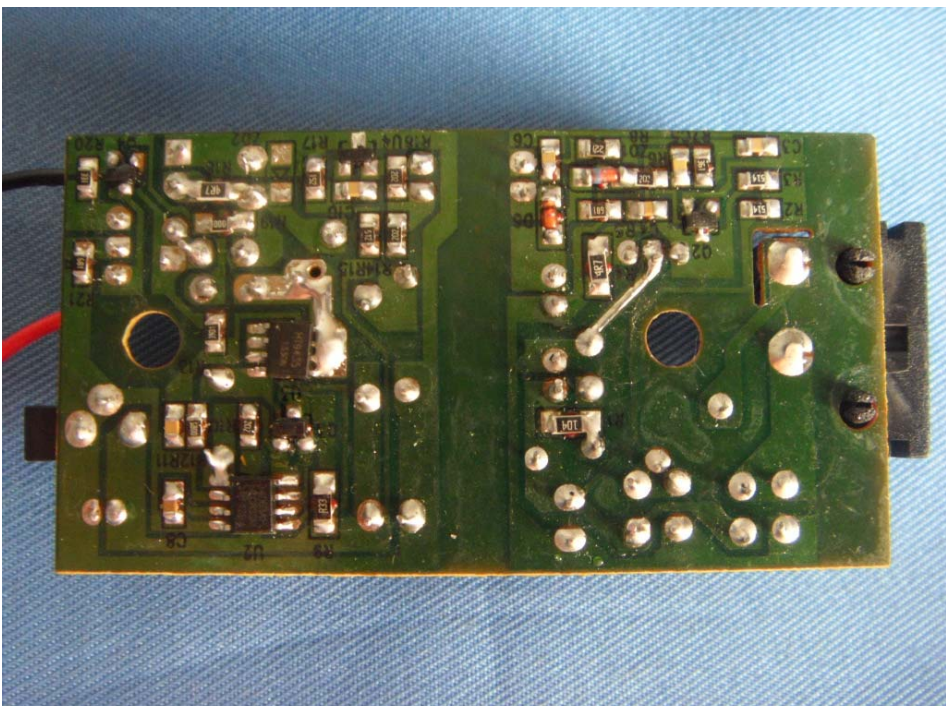
5.3	TABLE: fault condition tests			P
	ambient temperature (°C) .....	25.6°C		¾
	model/type of power supply .....	--		¾
	manufacturer of power supply .....	--		¾
	Rated markings of power supply .....	--		¾
Component no.	Fault	Test voltage (V)	Test time	Result
Output	o-l	253	4.5h	Input power increased. The max temperature as follows: Transformer (T1) winding: 107,3°C, no hazard.
Output	s-c	253	1s	Unit shut down, recoverable. No hazard.
C1	s-c	253	1s	Fuse open immediately. No hazard.
D1	s-c	253	1s	Fuse open immediately. No hazard.
Transformer output	s-c	253	1s	Unit shut down, recoverable. No hazard.
Transformer primary (Pin1-3)	s-c	253	1s	Fuse open immediately. No hazard.
Transformer primary (Pin2-4)	s-c	253	1s	Fuse open immediately. No hazard.
Optocoupler (pin 1-2)	s-c	253	1s	Unit shut down, recoverable. No hazard.
Optocoupler (pin 3-4)	s-c	253	1s	Unit shut down, recoverable. No hazard.
Optocoupler (pin 1)	o-c	253	1s	Unit shut down, recoverable. No hazard.
Remark: s-c: short circuit, o-l: overload				

Attachment – A  
Photo Documentation

<p>Photo 1</p> <p><input checked="" type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p>	
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<p>Photo 2</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input checked="" type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p>	
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<p>Photo 3</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p> <p><input checked="" type="checkbox"/> PCB</p>	
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<p>Photo 4</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p> <p><input checked="" type="checkbox"/> PCB</p>	
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END.