CENTRE OF TESTING SERVICE INTERNATIONAL

OPERATE ACCORDING TO ISO/IEC 17025

LVD TEST REPORT

TEST REPORT NUMBER : CGZ3161219-04369-L

CTS (Ningbo) Testing Service Technology Co., Ltd.
Fl.1 & 8 West, Bldg. B, No. 66, Qingyi Rd., Hi-Tech Zone, Ningbo, Zhejiang, China

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CTS (Ningbo) Testing Service Technology Co., Ltd.
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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.
The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.
Furthermore, there is no guarantee that a test sample which has Passed all the relevant tests conforms to a specification (only telecommunication products).
Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.
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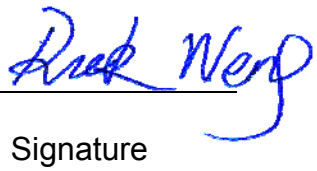
1.2 Tester

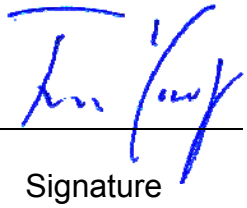
Tested by:

23 December 2016	**Kate Zhang**	
Date	Name	Signature

Reviewed by:

23 December 2016	**Rock Weng**	
Date	Name	Signature

Approved by:

23 December 2016	**Jun Yang**	
Date	Name	Signature

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1.3 Testing laboratory

1.3.1 Location

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Telephone: + 86-574-87912121
Telefax : + 86-574-87907993

1.3.2 Test location, where different from CTS:

Name: ./.
Street: ./.
Town: ./.
Country: ./.
Telephone: ./.
Fax: ./.
Teletex: ./.

1.4 Client details

1.4.1 Details of applicant

Name : Xindao B.V.
Street : P.O. Box 3082, 2280 GB,
Town : Rijswijk,
Country : The Netherlands
Telephone : +86-021-51093622-521
Fax : ./.
Teletex : ./.

Contact : Kevin Zhou
Telephone : ./.

1.4.2 Details of manufacturer

Name	: Xindao B.V.
Street	: P.O. Box 3082, 2280 GB,
Town	: Rijswijk,
Country	: The Netherlands
Telephone	: +86-021-51093622-521
Fax	: ./.
Teletex	: ./.
Contact	: Kevin Zhou
Telephone	: ./.

1.4.3 Details of factory

Name	: Xindao B.V.
Street	: P.O. Box 3082, 2280 GB,
Town	: Rijswijk,
Country	: The Netherlands

1.4.4 Dates of application

Date of receipt of application	: 09 December 2016
Date of receipt of test item	: 09 December 2016
Date of test	: 09 December – 23 December 2016

1.5 Test item Description

1.5.1 Description of test item

Type of product	: USB car charger
Model/Type reference	: P302.883
Serial number	: ---

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1.5.2 Test item particulars

Test item ..... :	USB car charger
Trade Mark ..... :	N/A
Rated Frequency ..... :	☐ 50Hz; ☐ 60Hz; ☐ 50/60Hz; ☒ DC; ☐ Other:
Rated Power(Current) ..... :	0,5A
Mains supply (V) ..... :	12V-24V⎓ (supplied by SELV)
Over voltage category (OVC) .. :	☒ OVC I; ☐ OVC II; ☐ OVC III; ☐ OVC IV
Mains supply tolerance (%) or absolute mains supply values..:	Not directly connected to mains
Class of equipment ..... :	☐ Class I; ☐ Class II; ☒ Class III; ☐ Not classified;
Considered current rating of protective device as part of the building installation (A) .....:	N/A
Degree of Protection ..... :	☒ IPX0
Pollution degree (PD) ..... :	☐ PD 1; ☒ PD 2; ☐ PD 3
Equipment mobility ..... :	☒ movable; ☐ Hand-held; ☐transportable ☐ Stationary; ☐ for building-in; ☐ direct plug-in
Connection to the mains ..... :	☐ pluggable equipment; ☐ permanent connection; ☐ detachable power supply cord; ☐ non-detachable power supply cord; ☒ not directly connected to the mains; ☐ Other:
Operating condition..... :	☒ continuous; ☐ rated operating / resting time:
Tested for IT power systems ... :	☐ Yes; ☒ No
IT testing, phase-phase voltage (V)..... :	N/A
Altitude during operation (m).... :	< 2000 m
Mass of Equipment (Kg) ..... :	18 g.
Instructions language..... :	☒ English; ☐ French; ☐ Other:

(all informations was provided by the applicant or detected at the sample)
Please see also attachment

1.6 Test standards

EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013
Information technology equipment – Safety –
Part 1: General requirements
（IEC 60950-1: 2005 + A1: 2009 + A2: 2013）

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2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed. ☒

2.2 Test environment

Temperature:	0 ... 40 °C
Relative humidity content:	20 ... 75 %
Air pressure:	86 ... 103 kPa
Details of power supply:	100 ... 240 V, AC; 0-60V, DC
Other parameters:	---

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2.3 Conformity verification - Summary of inspection

Clause	Summary of inspection	Test result		
		N.A.	Pass	Fail
1	General	☐	☒	☐
2	Protection from hazards	☐	☒	☐
3	Wiring, connections and supply	☐	☒	☐
4	Physical requirements	☐	☒	☐
5	Electrical requirements and simulated abnormal conditions	☐	☒	☐
6	Connection to telecommunication networks	☒	☐	☐
7	Connection to cable distribution systems	☒	☐	☐
Annexes		☐	☒	☐

Test case verdicts
N.A.: Test case does not apply to the test object
Pass: Test item does meet the requirement
Fail: Test item does not meet the requirement

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3 Test results basic standard(s)

3.1 Particulars: test item vs. Test requirements

IEC 60950-1 and/or EN 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Possible test case verdicts:	
- test case does not apply to the test object .....:	N(N/A)
- test object does meet the requirement .....:	P(Pass)
- test object does not meet the requirement .....:	F(Fail)
Test specification:	
Standard ..... :	☐ IEC 60950-1: 2005 + A1: 2009 + A2: 2013 ☒ EN 60950-1: 2006 + A11: 2009 + A1: 2010+ A12: 2011 + A2: 2013
Test procedure.....:	LVD COC approval.
Non-standard test method .....:	N/A
Test Report Form No. .....:	EN 60950_1E
Test Report Form(s) Originator .....:	Centre of Testing Service
Master TRF .....:	Dated Sep. 2014
Copyright blank test report	Centre of Testing Service

General remarks:

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

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

The test results presented in this report relate only to the object tested.

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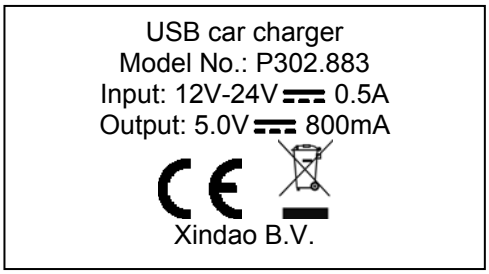
Copy of marking plate:



Note(s):
- The above markings are the minimum requirements required by safety standard. For the final production, the additional markings which do not give rise to misunderstanding may be added.

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3.2 General requirements and results

IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
1	**GENERAL**		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950 or relevant component standard	Components to be used complied either with the requirements of this standard or with the safety aspects of the relevant IEC component standards. (see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls		N
1.5.4	Transformers		N
1.5.5	Interconnecting cables		N
1.5.6	Capacitors bridging insulation		N
1.5.7	Resistors bridging insulation		N
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N
1.5.7.4	Accessible parts		N
1.5.8	Components in equipment for IT power systems		N
1.5.9	Surge suppressors		N
1.5.9.1	General		N
1.5.9.2	Protection of VDRs		N
1.5.9.3	Bridging of functional insulation by a VDR		N
1.5.9.4	Bridging of basic insulation by a VDR		N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N
1.6	Power interface		P

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
1.6.1	AC power distribution systems	The unit intended to be supplied by SELV.	N
1.6.2	Input current	Steady state input current of the equipment did not exceed the rated current by more than 10% under Maximum Normal Load. Maximum Normal Load is continuous operation at rated output load. (see appended table 1.6.2 for details)	P
1.6.3	Voltage limit of hand-held equipment		N
1.6.4	Neutral conductor		N

1.7	Marking and instructions		P
1.7.1	Power rating	Unit not provided with means for connection to mains	P
	Rated voltage(s) or voltage range(s) (V) ……:	See marking plate	P
	Symbol for nature of supply, for d.c. only……:	See marking plate	P
	Rated frequency or rated frequency range (Hz)....:	DC	N
	Rated current (mA or A) ……:	See marking plate	P
	Manufacturer's name or trade-mark or identification mark ……..:	See marking plate	P
	Model identification or type reference……..:	See marking plate	P
	Symbol for Class II equipment only ……..:	Class III	N
	Other markings and symbols .....:	Other symbols do not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking	Operating/safety instructions made available to the user.	P
1.7.2.1	General	Sufficient information provide in the safety instruction.	P
1.7.2.2	Disconnect devices		N
1.7.2.3	Overcurrent protective device		N
1.7.2.4	IT power distribution systems		N
1.7.2.5	Operator access with a tool	No operator access area containing a hazard	N
1.7.2.6	Ozone	No such substance	N
1.7.3	Short duty cycles	Continuous operation	N
1.7.4	Supply voltage adjustment .....:		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Methods and means of adjustment; reference to installation instructions .....:		N
1.7.5	Power outlets on the equipment .....:	No such parts	N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:		N
1.7.7	Wiring terminals		N
1.7.7.1	Protective earthing and bonding terminals .....:		N
1.7.7.2	Terminals for a.c. mains supply conductors		N
1.7.7.3	Terminals for d.c. mains supply conductors		N
1.7.8	Controls and indicators	LED for function indication only, no safety involved	N
1.7.8.1	Identification, location and marking .....:		N
1.7.8.2	Colours .....:		N
1.7.8.3	Symbols according to IEC 60417.....:		N
1.7.8.4	Markings using figures .....:		N
1.7.9	Isolation of multiple power sources .....:		N
1.7.10	Thermostats and other regulating devices .....:	No thermostats or other regulating devices provided	N
1.7.11	Durability	After this test, the marking remained legible and without curling.	P
1.7.12	Removable parts	Marking is not provided on removable parts	P
1.7.13	Replaceable batteries .....:		N
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations .....:	Equipment is not intended for installation in a restricted access location	N

2	**PROTECTION FROM HAZARDS**		—
2.1	Protection from electric shock and energy hazards		—
2.1.1	Protection in operator access areas	See below for details	P
2.1.1.1	Access to energized parts	Operator can gain access only to parts at SELV	P
	Test by inspection .....:		P
	Test with test finger (Figure 2A) .....:	No access to ELV or hazardous parts	P

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Test with test pin (Figure 2B) .....:	No access to ELV or hazardous parts	P
	Test with test probe (Figure 2C) .....:	No connection to TNV circuits	N
2.1.1.2	Battery compartments		N
2.1.1.3	Access to ELV wiring	No access to ELV	N
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No access to hazardous voltage circuit wiring	N
2.1.1.5	Energy hazards .....:	Class III unit intended to be supplied by SELV.	P
2.1.1.6	Manual controls		N
2.1.1.7	Discharge of capacitors in equipment	No capacitor in equipement	N
	Measured voltage (V); time-constant (s).....:		—
2.1.1.8	Energy hazards – d.c. mains supply		N
	a) Capacitor connected to the d.c. mains supply ..:		N
	b) Internal battery connected to the d.c. mains supply .....:		N
2.1.1.9	Audio amplifiers .....:	No such parts	N
2.1.2	Protection in service access areas		N
2.1.3	Protection in restricted access locations		N

2.2	SELV circuits		—
2.2.1	General requirements	The unit intended to be supplied by SELV.	P
2.2.2	Voltages under normal conditions (V) .....:	Between any conductors of the SELV circuit 42,4 V PK or 60 V DC are not exceeded.	P
2.2.3	Voltages under fault conditions (V) .....:	Within SELV limits.	P
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits are only connected to other secondary circuits. SELV circuit and all interconnected circuits separated from primary by reinforced or double insulation. SELV circuit does not exceed the SELV limits under normal and fault conditions.	P

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.3	TNV circuits		—
2.3.1	Limits	No TNV circuits	N
	Type of TNV circuits .....:		—
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions .....:		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed .....:		—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed .....:		—
2.3.5	Test for operating voltages generated externally		N
2.4	Limited current circuits		—
2.4.1	General requirements	No limited current circuits	N
2.4.2	Limit values		N
	Frequency (Hz).....:		—
	Measured current (mA) .....:		—
	Measured voltage (V).....:		—
	Measured circuit capacitance (nF or μF) .....:		—
2.4.3	Connection of limited current circuits to other circuits		N
2.5	Limited power sources		—
	a) Inherently limited output		N
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition		N
	d) Overcurrent protective device limited output		P
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....:	5,2Vdc, 1A	—
	Current rating of overcurrent protective device (A)	---	—

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.6	Provisions for earthing and bonding		—
2.6.1	Protective earthing	Class III	N
2.6.2	Functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		N
2.6.3.1	General		N
2.6.3.2	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area (mm^2), AWG.....:		—
2.6.3.3	Size of protective bonding conductors		N
	Rated current (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).....:		N
2.6.3.5	Colour of insulation.....:		N
2.6.4	Terminals		N
2.6.4.1	General		N
2.6.4.2	Protective earthing and bonding terminals		N
	Rated current (A), type, nominal thread diameter (mm).....:		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N
2.6.5	Integrity of protective earthing		N
2.6.5.1	Interconnection of equipment		N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N
2.6.5.3	Disconnection of protective earth		N
2.6.5.4	Parts that can be removed by an operator		N
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		N
2.6.5.7	Screws for protective bonding		N
2.6.5.8	Reliance on telecommunication network or cable distribution system		N
2.7	Overcurrent and earth fault protection in primary circuits		—

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.7.1	Basic requirements	No directly connected to mains	N
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7		N
2.7.3	Short-circuit backup protection		N
2.7.4	Number and location of protective devices .....:		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel.....:		N

2.8	Safety interlocks		—
2.8.1	General principles	No such parts	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches and relays		N
2.8.7.1	Contact gaps (mm) .....:		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test		N
2.8.8	Mechanical actuators		N

2.9	Electrical insulation		—
2.9.1	Properties of insulating materials	Class III / SELV equipment	N
2.9.2	Humidity conditioning		N
	Relative humidity (%), temperature (°C) .....:		—
2.9.3	Grade of insulation		N
2.9.4	Separation from hazardous voltages		N
	Method(s) used .....:		—

2.10	Clearances, creepage distances and distances through insulation		—
2.10.1	General		P
2.10.1.1	Frequency .....:	< 30 kHz	N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.10.1.2	Pollution degrees .....:	Pollution degree 2	P
2.10.1.3	Reduced values for functional insualtion	There is no minimum Cl or Cr unless it is required by 5.3.4 a)	P
2.10.1.4	Intervening unconnected conductive parts		N
2.10.1.5	Insulation with varying dimensions		N
2.10.1.6	Special separation requirements		N
2.10.1.7	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage		N
2.10.2.1	General		N
2.10.2.2	RMS working voltage		N
2.10.2.3	Peak working voltage		N
2.10.3	Clearances		N
2.10.3.1	General		N
2.10.3.2	Mains transient voltages		N
	a) AC mains supply .....:		N
	b) Earthed d.c. mains supplies .....:	No such parts	N
	c) Unearthed d.c. mains supplies .....:	No such parts	N
	d) Battery operation .....:	No such parts	N
2.10.3.3	Clearances in primary circuits		N
2.10.3.4	Clearances in secondary circuits		N
2.10.3.5	Clearances in circuits having starting pulses		N
2.10.3.6	Transients from a.c. mains supply .....:		N
2.10.3.7	Transients from d.c. mains supply .....:		N
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:		N
2.10.3.9	Measurement of transient voltage levels		N
	a) Transients from a mains suplply		N
	For an a.c. mains supply .....:		N
	For a d.c. mains supply .....:		N
	b) Transients from a telecommunication network :		N
2.10.4	Creepage distances		N
2.10.4.1	General		N
2.10.4.2	Material group and caomparative tracking index	Material group IIIb	N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	CTI tests .....:	Material group IIIb is assumed to be used; 100<=CTI<175.	—
2.10.4.3	Minimum creepage distances		N
2.10.5	Solid insulation		N
2.10.5.1	General		N
2.10.5.2	Distances through insulation		N
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		N
2.10.5.5.	Cemented joints	No such parts	N
2.10.5.6	Thin sheet material – General		N
2.10.5.7	Separable thin sheet material		N
	Number of layers (pcs).....:		—
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N
	Electric strength test		—
2.10.5.11	Insulation in wound components		N
2.10.5.12	Wire in wound components		N
	Working voltage .....:		N
	a) Basic insulation not under stress .....:		N
	b) Basic, supplemetary, reinforced insulation .....:		N
	c) Compliance with Annex U .....:		N
	Two wires in contact inside wound component; angle between 45° and 90° .....:		N
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test		—
	Routine test		N
2.10.5.14	Additional insulation in wound components		N
	Working voltage .....:		N
	- Basic insulation not under stress .....:		N
	- Supplemetary, reinforced insulation .....:		N
2.10.6	Construction of printed boards	See appended table 1.5.1 for details	P

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.10.6.1	Uncoated printed boards	See appended table 1.5.1 for details	P
2.10.6.2	Coated printed boards		N
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation		N
	Number of insulation layers (pcs).....:		N
2.10.7	Component external terminations		N
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test		N
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		N

3	**WIRING, CONNECTIONS AND SUPPLY**		—
3.1	General		—
3.1.1	Current rating and overcurrent protection		P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors		N
3.1.5	Beads and ceramic insulators		N
3.1.6	Screws for electrical contact pressure		N
3.1.7	Insulating materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws		N
3.1.9	Termination of conductors		N
	10 N pull test		N
3.1.10	Sleeving on wiring		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
3.2	Connection to a mains supply		—
3.2.1	Means of connection	No directly connected to mains	N
3.2.1.1	Connection to an a.c. mains supply		N
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment		N
	Number of conductors, diameter of cable and conduits (mm) ..... :		—
3.2.4	Appliance inlets		N
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords	No such parts	N
3.2.6	Cord anchorages and strain relief	No such parts	N
	Mass of equipment (kg), pull (N) ..... :	---	—
	Longitudinal displacement (mm) ..... :	---	—
3.2.7	Protection against mechanical damage	No such parts	N
3.2.8	Cord guards	No such parts	N
	Diameter or minor dimension D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm)..... :		—
3.2.9	Supply wiring space		N
3.3	Wiring terminals for connection of external conductors		—
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :		—
3.3.5	Wiring terminal sizes		N

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Clause	Requirement - Test	Result - Remark	Verdict
	Rated current (A), type, nominal thread diameter (mm) .....:		—
3.3.6	Wiring terminal design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N

3.4	Disconnection from the mains supply		—
3.4.1	General requirement		N
3.4.2	Disconnect devices		N
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords		N
3.4.6	Number of poles - single-phase and d.c. equipment		N
3.4.7	Number of poles - three-phase equipment		N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N

3.5	Interconnection of equipment		—
3.5.1	General requirements	See below for details.	P
3.5.2	Types of interconnection circuits .....:	SELV interconnection circuits via secondary output connector.	P
3.5.3	ELV circuits as interconnection circuits	No ELV circuits	N
3.5.4	Data ports for additional equipment	No data ports	N

4	**PHYSICAL REQUIREMENTS**		—
4.1	Stability		—
	Angle of 10°	No more than 7 kg for the mass of the unit.	N
	Test force (N) .....:		N
4.2	Mechanical strength		—
4.2.1	General		N
	Rack-mounted equipment		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
4.2.2	Steady force test, 10 N	Class III / SELV equipment, No hazards	N
4.2.3	Steady force test, 30 N	No internal enclosure.	N
4.2.4	Steady force test, 250 N	Class III / SELV equipment, No hazards	N
4.2.5	Impact test	Class III / SELV equipment, No hazards	N
	Fall test		N
	Swing test		N
4.2.6	Drop test; height (mm) .....:		N
4.2.7	Stress relief test		N
4.2.8	Cathode ray tubes	No such parts	N
	Picture tube separately certified .....:		N
4.2.9	High pressure lamps	No such parts	N
4.2.10	Wall or ceiling mounted equipment; force (N) .....:		N
4.2.11	Rotating solid media		N
	Test to cover on the door		N

4.3	Design and construction		—
4.3.1	Edges and corners	Edges and corrners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N) ..... :		N
4.3.3	Adjustable controls	No such parts	N
4.3.4	Securing of parts	All hazardous parts are fixed to retain position in event of termination failure.	P
4.3.5	Connection by plugs and sockets	Not have any interchangeable plugs/sockets.	P
4.3.6	Direct plug-in equipment		N
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		N
4.3.7	Heating elements in earthed equipment	No heating elements	N
4.3.8	Batteries		N
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
4.3.9	Oil and grease	No such parts	N
4.3.10	Dust, powders, liquids and gases	No such parts	N
4.3.11	Containers for liquids or gases	No such parts	N
4.3.12	Flammable liquids .....:	No such parts	N
	Quantity of liquid (l) .....:		N
	Flash point (°C) .....:		N
4.3.13	Radiation		P
4.3.13.1	General	LED indicators	P
4.3.13.2	Ionizing radiation		N
	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 such parts	N
	Part, property, retention after test, flammability classification .....:		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:		N
4.3.13.5	Laser (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser diodes)		N
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)	This product contains only visible indicator LEDs (Class 1) operating in the range of 400-700 nm wavelength. No IEC 60825-1 evaluation was deemed necessary.	N
	Laser class .....:	(For indicator LEDs, see above statement)	—
4.3.13.6	Other types .....:		N

4.4	Protection against hazardous moving parts		—
4.4.1	General	No moving parts	N
4.4.2	Protection in operator access areas .....:		N
4.4.3	Protection in restricted access locations .....:		N
4.4.4	Protection in service access areas		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
4.5	Thermal requirements		P
4.5.1	General	The equipment and its component parts did not attain excessive temperatures during normal operation.	P
4.5.2	Temperature tests	See appended table 4.5 for details	P
	Normal load condition per Annex L .....:	Operated in the most unfavorable way of operation given in the operating istructions until stead conditions established.	—
4.5.3	Temperature limits for materials	(see appended table 4.5 for details)	P
4.5.4	Touch temperature limits	(see appended table 4.5 for details)	P
4.5.5	Resistance to abnormal heat .....:		N
4.6	Openings in enclosures		N
4.6.1	Top and side openings	Class III	N
	Dimensions (mm) .....:		—
4.6.2	Bottoms of fire enclosures		N
	Construction of the bottomm, dimensions (mm) ..:		—
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment		N
4.6.4.1	Constructional design measures		N
	Dimensions (mm) .....:		—
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		N
	Conditioning temperature (°C), time (weeks).....:		—
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	See below for details.	P
	Method 1, selection and application of components wiring and materials	Materials with the required flammability classes are used. (see appended table 4.7 for details)	P

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure	See below for details.	P
4.7.2.1	Parts requiring a fire enclosure	Fire enclosure covers all parts	P
4.7.2.2	Parts not requiring a fire enclosure	Output circuit supplied by a LPS complying with Sub-clause 2.5 and with output connector plastic rated minimum V-2.	P
4.7.3	Materials		P
4.7.3.1	General	See below for details	P
4.7.3.2	Materials for fire enclosures	Minimum V-1.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Fire enclosure covers all parts	N
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated minimum V-2 or are mounted on a PCB rated minimum V-1.	P
4.7.3.5	Materials for air filter assemblies	No such parts	N
4.7.3.6	Materials used in high-voltage components	No such parts	N

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		—
5.1	Touch current and protective conductor current		N
5.1.1	General		N
5.1.2	Configuration of equipment under test (EUT)		N
5.1.2.1	Single connection to an a.c. mains supply		N
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N
5.1.3	Test circuit		N
5.1.4	Application of measuring instrument		N
5.1.5	Test procedure		N
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
	Measured protective conductor current (mA) .....:		—

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Max. allowed protective conductor current (mA)...:		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N
5.1.7.1	General .....:		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No such parts	N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N
	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) EUT with earthed telecommunication ports .....:		N
	b) EUT whose telecommunication ports have no reference to protective earth		N

5.2	Electric strength		—
5.2.1	General	Class III / SELV equipement	N
5.2.2	Test procedure		N

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	see appended table 5.3 for details	P
5.3.2	Motors	No such parts	N
5.3.3	Transformers		N
5.3.4	Functional insulation.....:	Method (c).	P
5.3.5	Electromechanical components	No such parts	N
5.3.6	Audio amplifiers in ITE .....:	No such parts	N
5.3.7	Simulation of faults	see appended table 5.3 for details	P
5.3.8	Unattended equipment	No such parts	N
5.3.9	Compliance criteria for abnormal operating and fault conditions	see appended table 5.3 for details	P

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
5.3.9.1	During the tests	No fire, emission of molten metal or deformation was noted during the tests.	P
5.3.9.2	After the tests		P

6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		—
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements	No such parts	N
	Supply voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		N

6.2	Protection of equipment users from overvoltages on telecommunication networks		—
6.2.1	Separation requirements	No such parts	N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test		N
6.2.2.3	Compliance criteria		N

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

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		—
7.1	General	No such parts	N
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
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N

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3.3 Annex as stated in the standards

IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N
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.1.1	Samples ..... :		—
	Wall thickness (mm)..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		N
A.1.3	Mounting of samples ..... :		N
A.1.4	Test flame (see IEC 60695-11-3)		N
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	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.2.1	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		N
A.2.3	Mounting of samples ..... :		N
A.2.4	Test flame (see IEC 60695-11-4)		N
	Flame A, B or C ..... :		—
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	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
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
A.3	Hot flaming oil test (see 4.6.2)		N
A.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N

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

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
	Method of protection ..... :		—
C.1	Overload test		N
C.2	Insulation		N
	Protection from displacement of windings ..... :		N

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

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)	N

F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)	N

G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
G.1	Clearances		N
G.1.1	General		N
G.1.2	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V)		N
G.2.1	AC mains supply ..... :		N
G.2.2	Earthed d.c. mains supplies ..... :		N
G.2.3	Unearthed d.c. mains supplies ..... :		N
G.2.4	Battery operation ..... :		N
G.3	Determination of telecommunication network transient voltage (V) ..... :		N
G.4	Determination of required withstand voltage (V)		N
G.4.1	Mains transients and internal repetitive peaks .... :		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
G.4.2	Transients from telecommunication networks .....:		N
G.4.3	Combination of transients		N
G.4.4	Transients from cable distribution systems		N
G.5	Measurement of transient voltages (V)		N
	a) Transients from a mains supply		N
	For an a.c. mains supply		N
	For a d.c. mains supply		N
	b) Transients from a telecommunication network		N
G.6	Determination of minimum clearances .....:		N

H	ANNEX H, IONIZING RADIATION (see 4.3.13)	N

J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N
	Metal(s) used .....:		—

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V) .....:		N
K.3	Thermostat endurance test; operating voltage (V) .....:		N
K.4	Temperature limiter endurance; operating voltage (V) .....:		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation		N

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment		P

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
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
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) ..... :		N

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
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N

P	ANNEX P, NORMATIVE REFERENCES		—

Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N
	a) Preferred climatic categories ..... :		N
	b) Maximum continuous voltage ..... :		N
	c) Pulse current ..... :		N

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

S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
S.1	Test equipment		N
S.2	Test procedure		N

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Clause	Requirement - Test	Result - Remark	Verdict
S.3	Examples of waveforms during impulse testing		N

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

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

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N
V.1	Introduction	No directly connected to mains	N
V.2	TN power distribution systems		N

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N
W.1	Touch current from electronic circuits		N
W.1.1	Floating circuits		N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
W.2.3	Common return, connected to protective earth		N

X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N

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

Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)	P

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict

EN 60950-1:2006 – CENELEC COMMON MODIFICATIONS		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations	P
General	Delete all the "country" notes in the reference document according to the following list: 1.4.8 Note 2; 1.5.1 Note 2 & 3; 1.5.7.1 Note 1.5.8 Note 2; 1.5.9.4 Note; 1.7.2.1 Note 4, 5 & 6 2.2.3 Note; 2.2.4 Note; 2.3.2 Note 2.3.2.1 Note 2; 2.3.4 Note 2; 2.6.3.3 Note 2 & 3 2.7.1 Note; 2.10.3.2 Note 2; 2.10.5.13 Note 3 3.2.1.1 Note; 3.2.4 Note 3.; 2.5.1 Note 2 4.3.6 Note 1 & 2; 4.7 Note 4; 4.7.2.2 Note 4.7.3.1 Note 2; 5.1.7.1 Note 3 & 4; 5.3.7 Note 1 6 Note 2 & 5; 6.1.2.1 Note 2; 6.1.2.2 Note 6.2.2 Note 6.; 2.2.1 Note 2; 6.2.2.2 Note 7.1 Note 3; 7.2 Note; 7.3 Note 1 & 2 G.2.1 Note 2; Annex H Note 2	P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	N
1.5.1	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	P

1.7.2.1	Add the following NOTE: NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss	N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; 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.		N
2.7.2	This subclause has been declared 'void'.		P
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		---
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.		N
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: | Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A.		N
4.3.13.6	Add the following NOTE: 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. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N
Annex H	Replace the last paragraph of this annex by:		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	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.		
Biblio-graphy	Additional EN standards.		—

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

ZB	SPECIAL NATIONAL CONDITIONS	N
1.2.4.1	In Denmark, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N
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 1.5.7.2.	N
1.5.8	In Norway, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	N
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
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 suojamaadoituskoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag”	N
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.	N
2.2.4	In Norway, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N
2.3.2	In Finland, Norway and Sweden there are additional requirements for the	N

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Clause	Requirement - Test	Result - Remark	Verdict
	insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		
2.3.4	In Norway, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N
2.6.3.3	In the United Kingdom, the current rating of the circuit shall be taken as 13 A, not 16 A.		N
2.7.1	In the United Kingdom, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N
2.10.5.13	In Finland, Norway and Sweden, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N
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 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, 16 A SEV 5934-2.1998 Plug Type 23 L+N+PE 250 V, 16 A		N
3.2.1.1	In Denmark, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N

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		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	be in accordance with UNE-EN 60309-2.		
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.		N
3.2.1.1	In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N
3.2.4	In Switzerland, for requirements see 3.2.1.1 of this annex.		N
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.		N
3.3.4	In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		N
4.3.6	In the United Kingdom, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N
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
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;		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		
6.1.2.1	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. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in 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. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, 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 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.		N
6.1.2.2	In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N
7.2	In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
7.3	In Norway and Sweden, there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation.		N
7.3	In Norway, for installation conditions see EN 60728-11:2005.		N

ZC	A-DEVIATIONS (informative)	P
1.5.1	Sweden (Ordinance 1990:944) Add the following: NOTE In Sweden, switches containing mercury are not permitted.	P
1.5.1	Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.	P
1.7.2.1	Denmark (Heavy Current Regulations) Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: “For tilslutning af de øvrige ledere, se medfølgende installationsvejledning.”	N

1.7.2.1	Germany (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2). If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.	N
1.7.5	Denmark (Heavy Current Regulations) With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	N

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IEC 60950-1 and / or EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
1.7.13	Switzerland (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) Annex 2.15 of SR 814.81 applies for batteries.		N
5.1.7.1	Denmark (Heavy Current Regulations, Chapter 707, clause 707.4) TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.		N
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N

BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—

CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		—
CC.1	Integrated circuit (IC) current limiters		N
CC.2	Test program 1		N
CC.3	Test program 2		N

DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		—
DD.1	General		N
DD.2	Mechanical strength test, variable N		N
DD.3	Mechanical strength test, 250 N, including end stops		N
DD.4	Compliance		N

EE	ANNEX EE, Household and home/office document/media shredders		—
EE.1	General		N
EE.2	Markings and instructions		N
EE.3	Inadvertent reactivation		N
EE.4	Disconnection of power to hazardous moving parts		N
EE.5	Protection against hazardous moving parts		N

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3.4 Tables

IEC 60950-1 and / or EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Enclosure	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	L-1225LD	V-2; 80℃	---	UL E244324 Tested with appliance
PCB	HAIMEN JIANHE PCB CO LTD	YG 01	V-0; 105℃	---	UL E200705 Tested with appliance
1) An asterisk indicates a mark which assures the agreed level of surveillance					
Supplementary information: /					

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
12V DC	0,44	0,5	---	---	---	Maximum normal load
24V DC	0,23	0,5	---	---	---	Maximum normal load
Supplementary information: Maximum normal load: Connected to external battery and operated continuously for nornal charging						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.)(A)	VA(max.)(VA)	
5	0,8	5,2	1	5,2	
Supplementary information: /					

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			N
Component (measured between)	Max. voltage (V) (normal operation)		Voltage Limiting Components	
	V peak	V d.c		
---	---	---	---	
Supplementary information: supplied by SELV				

2.5	TABLE: limited power source	N
Circuit output tested: according to Table 2B with normal operation		

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Measured Uoc (V) with all load circuits disconnected:				
	I sc (A)		VA	
	Meas.	Limit	Meas.	Limit
---	---	---	---	---
Supplementary information: supplied from approved power supply complied with LPS.				

2.10.2	TABLE: working voltage measurement			N
Location	RMS voltage (V)	Peak voltage (V)	Comments	
---	---	---	---	
Supplementary information: /				

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						N
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:							
---	---	---	---	---	---	---	
Supplementary information: All circuits supplied by SELV only Functional Insulation required.							

2.10.5	TABLE: Distance through insulation measurements				N
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
---	---	---	---	---	---
Supplementary information: /					

4.3.8	TABLE: Batteries									N
The tests of 4.3.8 are applicable only when appropriate battery data is not available										N
Is it possible to install the battery in a reverse polarity position?										N
---	Non-rechargeable batteries			Rechargeable batteries						
---	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
Parts.	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
- Chemical leaks										N
- Explosion of the battery										N
- Emission of flame or expulsion of molten metal										N
- Electric strength tests of equipment after completion of tests						---				N

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Supplementary information:

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	12V DC	24V DC	---	---	---	—
	Ambient T_{min} (°C) .....:	---	---	---	---	---	—
	Ambient T_{max} (°C) .....:	---	---	---	---	---	—
Maximum measured temperature T of part/at::		T (°C)					Allowed T_{max} (°C)
Metal knob		28,0	27,8	---	---	---	60
C1 capacitor		46,3	54,8	---	---	---	105
PCB		78,4	76,2	---	---	---	130
Plastic Enclosure inside		50,4	51,8	---	---	---	85
Plastic Enclosure outside		36,6	37,5	---	---	---	95
Ambient		25,0	25,1	---	---	---	---

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
---	---	---	---	---	---	---	---

Supplementary information: /

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

Part	Test temperature (°C)	Impression diameter (mm)
---	---	---

Supplementary information: /

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Enclosure	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	L-1225LD	Min. 1,5	V-2	Pass
Supplementary information: See appended table 1.5.1 for details					

5.1	TABLE: touch current measurement			N
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	

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Supplementary information: /			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			N
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
For unit:		---	---	---
Supplementary information: /				

5.3	TABLE: TABLE: Fault condition tests					P
	Ambient temperature (°C) .....:			25		—
	Power source for EUT: Manufacturer, model/type, output rating .....:			---		—
Com-ponent No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Output	Overload	12 Vdc	1 hour	---	1A	NCD, NC, NH
Output	Short circuit	12 Vdc	3 mins	---	---	USD, NCD, NC, NH
C1	Short circuit	12 Vdc	3 mins	---	---	USDI, NCD, NC, NH
C2	Short circuit	12 Vdc	3 mins	---	---	NCD, NC, NH
D2	Short circuit	12 Vdc	3 mins	---	---	NCD, NC, NH
Supplementary information: NB = No indication of dielectric breakdown after 60 seconds; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No component damaged; CD = Component damaged; USDI = Unit shut down immediately; NH = No hazardous; USD = Unit shut down						

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Attachments

☒ Photo document

☐ BOM

☐ CDF (critical data form)

☐ Copies of certificates of certified components

☐ Instruction manual

☐ Circuit diagram

☐ Explosion block

☐ Other if necessary

----------end of report----------

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Type Designation: **USB car charger, P302.883**
Report Number: **CGZ3161219-04369-L**

Figure 1 （External view – side 1）

Figure 2 （External view – side 2）

Type Designation: **USB car charger, P302.883**
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Figure 3 （External view – side 3）

Figure 4 （External view – side 4）

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Type Designation: **USB car charger, P302.883**
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Figure 5 （Internal construction view 1）

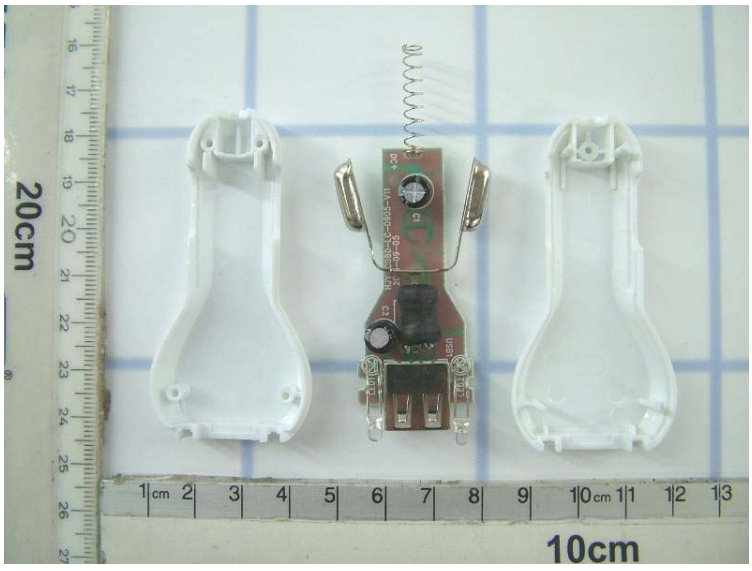

Figure 6 （Internal construction view 2）

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Type Designation: **USB car charger, P302.883**
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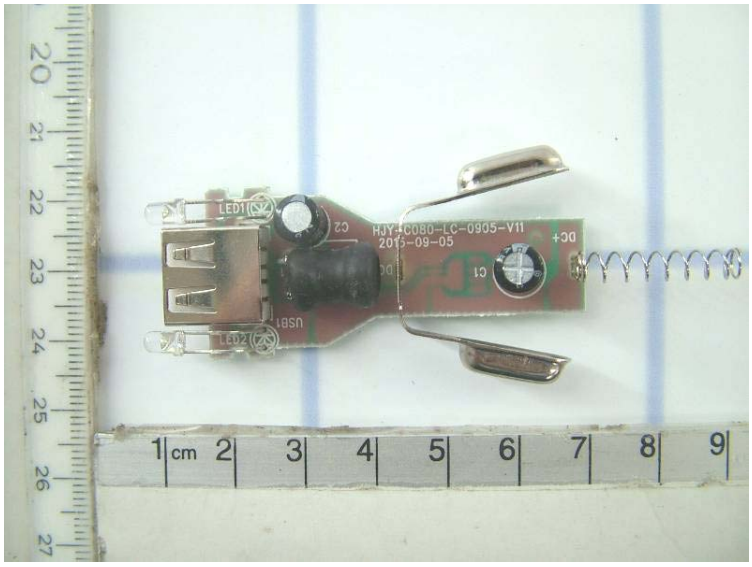

Figure 7 （PCB –side 1）

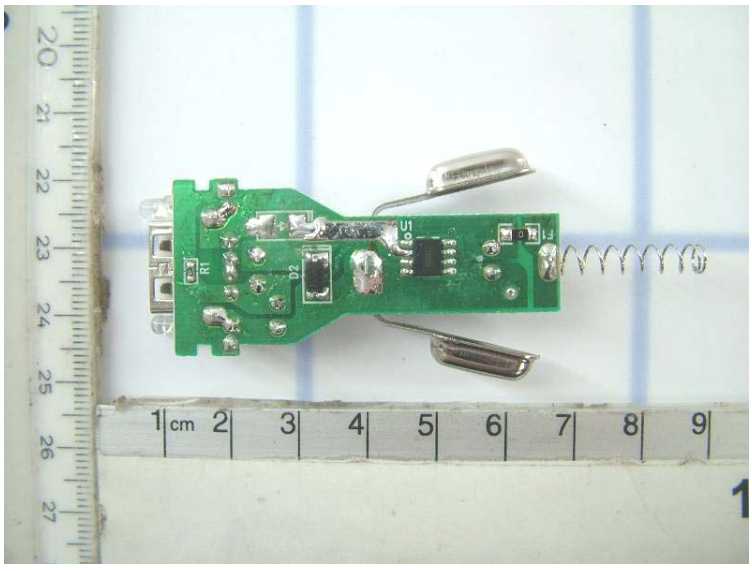

Figure 8 （PCB –side 2）