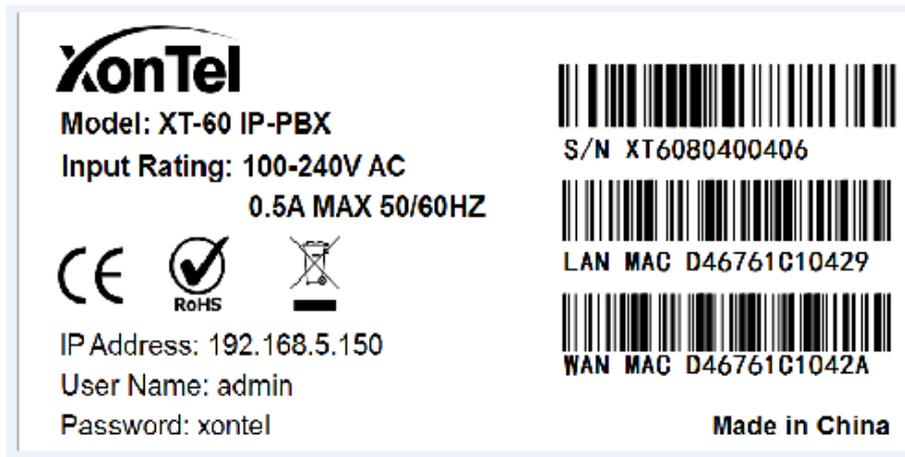


TEST REPORT EN 60950-1 Safety of information technology equipment Part 1-General requirements	
Report reference No	R2XM180207050-03M1
Compiled by (+ signature)	Engineer: Eric Ding <i>Eric Ding</i>
Approved by (+ signature)	Team Leader: Robin He <i>Robin He</i>
Date of issue	2018-04-28
Testing laboratory	Bay Area Compliance Laboratories Corp. (Dongguan)
Address	No.69, Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China
Testing location	As above
Applicant's name	United GULF GATE Co.
Address	Aladel Tower,F21 ,Fahad Al Salem St., State of KUWAIT
Manufacturer's name.....	United GULF GATE Co.
Address	Aladel Tower,F21 ,Fahad Al Salem St., State of KUWAIT
Factory's name.....	N/A
Address	N/A
Standard.....	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
Test sample(s) received.....	2018-02-09
Test in period.....	2018-03-27 to 2018-04-08
Procedure deviation	N.A.
Non-standard test method	N.A.
Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the specific product described herein. It must not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).	

Test item description	IP PBX
Trademark	XonTel
Model/type reference	XT-60 IP-PBX
Manufacturer	United GULF GATE Co.
Rating	EUT input: 100-240V~ 50/60Hz 0.5A Max.

Copy of marking plate:



Note: Other models' label are same as above, only different of model name.

- The CE marking and WEEE symbol (if any) should be at least 5,0mm and 7,0mm respectively in height.
- Manufacturers shall ensure that the equipment bears a type, batch or serial number or other element allowing its identification
- Manufacturers shall indicate on the electrical equipment their name, registered trade name or registered trade mark and the postal address at which they can be contacted
- Importers shall indicate on the electrical equipment their name, registered trade name or registered trade mark and the postal address at which they can be contacted

Test item particulars	
Equipment mobility	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other
Mains supply tolerance (%).....	-10% to +10%
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	16A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 2000m
Altitude of test laboratory (m)	Below 2000m
Max. Specified ambient temperature(°C) :	40°C
Mass of equipment (kg).....	1.56kg
Possible test case verdicts	
- test case does not apply to the test object.....	N/A(or N)
- test object does meet the requirement.....	P(ass)
- test object does not meet the requirement.....	F(ail)
General remarks:	
"(see remark #)" refers to a remark appended to the report.	
(see appended table)" refers to a table appended to the report.	
The test results presented in this report relate only to the object tested.	
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.	
Throughout this report a <input type="checkbox"/> comma/ <input checked="" type="checkbox"/> point is used as the decimal separator.	

General product information:

Description of the producter

1. Product description:

The product tested with model name XT-60 IP-PBX is a IP PBX, which is Class I equipment, directly connect to AC mais and rated input 100-240Vac, 50/60Hz, 0.5A Max.

Maximum recommended ambient (Tmra): 40°C

2. Data ports Connection:

RJ11 FXS ports Connect to the analog phone and RJ11 BRI ports connect to a ISDN BRI line.

LAN port interface will be used for uplink connection. WAN port interface will be used as bridge for PC connection

3. Circuit characteristics:

All circuits are considered as TNV-3 circuits except the switch power supply circuits.

Remark:

This report is based on and replaced the BACL report No.: R2XM180207050-03, the only difference is changed the applicant's and manufacturer's name to " United GULF GATE Co. " and the address be changed to " Aladel Tower,F21 ,Fahad Al Salem St., State of KUWAIT ". Others are the same, no need add test.

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	Components that were found to affect safety aspects comply with the requirements of this standard or within 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>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with IEC60950-1 and the relevant component Standard.</p> <p>Components, for which no relevant IEC Standard exist, have been tested under the condition occurring in the equipment, using applicable parts of IEC60950-1.</p>	P
1.5.3	Thermal controls	No such component	N
1.5.4	Transformers	Evaluated in approved switching power supply, see appended table 1.5.1	P
1.5.5	Interconnecting cables	Comply with the relevant requirements of this standard	P
1.5.6	Capacitors bridging insulation	Evaluated in approved switching power supply, see appended table 1.5.1	P
1.5.7	Resistors bridging insulation	Evaluated in approved switching power supply, see appended table 1.5.1	P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		P
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

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

1.5.8	Components in equipment for IT power systems	Not intend for IT power distribution systems.	N
1.5.9	Surge suppressors	Surge suppressors evaluated in approved switching power supply, see appended table 1.5.1	P
1.5.9.1	General		P
1.5.9.2	Protection of VDRs	VDR evaluated in approved switching power supply	P
1.5.9.3	Bridging of functional insulation by a VDR		P
1.5.9.4	Bridging of basic insulation by a VDR		N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N

1.6	Power interface		P
1.6.1	AC power distribution systems	TN power system.	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment	N
1.6.4	Neutral conductor		N

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N
	Rated voltage(s) or voltage range(s) (V)	100-240	P
	Symbol for nature of supply, for d.c. only		N
	Rated frequency or rated frequency range (Hz) ... :	50/60Hz	P
	Rated current (mA or A)	0.5A Max.	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark	Trade-mark: XonTel	P
	Model identification or type reference	XT-60 IP-PBX	P
	Symbol for Class II equipment only	Class I equipment	N
	Other markings and symbols	Others marking can be added, which not misunderstand.	P
1.7.1.3	Use of graphical symbols	Considered	P
1.7.2	Safety instructions and marking	In user manual	P

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Power plug of the power supply cord is intended to serve as the disconnect device	P
	-for permanently connected equipment, a readily accessible disconnect device shall be incorporated in the building installation wiring	Not permanently connected equipment	N
	-for pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible	Power plug used as disconnected device	P
1.7.2.3	Overcurrent protective device	Pluggable equipment Type A	N
1.7.2.4	IT power distribution systems		N
1.7.2.5	Operator access with a tool		N
1.7.2.6	Ozone	The equipment does not produce ozone.	N
1.7.3	Short duty cycles	Continuous operation.	N
1.7.4	Supply voltage adjustment	No voltage selector	N
	Methods and means of adjustment; reference to installation instructions		N
1.7.5	Power outlets on the equipment	No standard power outlet.	N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Fuse used in Approved switching power supplies: T2A/250VAC	P
1.7.7	Wiring terminals		P
1.7.7.1	Protective earthing and bonding terminals		P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment not for permanent connection or provided with a non-detachable power supply cord	N
1.7.7.3	Terminals for d.c. mains supply conductors	No connection to d.c. mains supply	N
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	The correct marking are used adjacent to the switch.	P
1.7.8.2	Colours	Safety is not involved.	N
1.7.8.3	Symbols according to IEC 60417	"I" and indicate the "ON", and "O" indicate the "OFF"	P
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		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.11	Durability	Rubbed with a cloth soaked with water for 15s then again for 15s with cloth soaked with petroleum spirit, after this test, the marking on the label did not fade there are no curling nor lifting of the label edge.	P
1.7.12	Removable parts	No such removable parts.	N
1.7.13	Replaceable batteries		N
	Language(s)		
1.7.14	Equipment for restricted access locations		N

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	See below.	P
2.1.1.1	Access to energized parts		P
	Test by inspection	No hazardous parts can be accessed	P
	Test with test finger (Figure 2A)	No hazardous parts can be accessed	P
	Test with test pin (Figure 2B)	No hazardous parts can be accessed	P
	Test with test probe (Figure 2C)	No TNV circuits can be accessed	P
2.1.1.2	Battery compartments	No such component	N
2.1.1.3	Access to ELV wiring	No ELV wiring	N
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		N
2.1.1.5	Energy hazards		N
2.1.1.6	Manual controls		N
2.1.1.7	Discharge of capacitors in equipment	Evaluated in approved power switching supplies	P
	Measured voltage (V); time-constant (s)		—
2.1.1.8	Energy hazards – d.c. mains supply	No connection to 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 audio amplifiers	N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.2	Protection in service access areas	No bare parts operating at HAZARDOUS VOLTAGES in a service access area	N
2.1.3	Protection in restricted access locations	Equipment not intended for installation in restricted access locations	N

2.2	SELV circuits		P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V)	Not exceed SELV limit	P
2.2.3	Voltages under fault conditions (V)	Not exceed SELV limit	P
2.2.4	Connection of SELV circuits to other circuits	<p>Only connected to SELV, LCC and hazardous voltage secondary circuits, but accessible parts do not exceed the limits of SELV in the event of single failure of a component or shorting of functional insulation not complying with the requirement.</p> <p>Hazardous voltage secondary circuit is separated from primary by double or reinforced insulation.</p> <p>See power supply test report.</p>	P

2.3	TNV circuits		P
2.3.1	Limits	<p>- When telephone ringing signals are present: see Annex M;</p> <p>- When telephone ringing signals are not present: Port 4 TIP4 to RING4:</p> <p>a. The max. U under normal operating conditions: 48Vdc b. The max. U across 5K ohm resistor in the event of a single fault: R5 short circuit: 20Vdc C1 short circuit: 48Vdc U2 pin (4-5) short circuit: 20Vdc</p> <p>All value measured on fault condition not exceed 120Vdc.</p>	P
	Type of TNV circuits	TNV-3 circuits	—

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Clause	Requirement + Test	Result - Remark	Verdict
2.3.2	Separation from other circuits and from accessible parts	See below	P
2.3.2.1	General requirements	Complied	P
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	After test, no hazards	P
2.3.3	Separation from hazardous voltages	See clause 3.4	P
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits	TNV circuit is separated from primary circuit by double insulation or reinforced insulation	P
	Insulation employed	Double insulation or reinforced insulation	—
2.3.5	Test for operating voltages generated externally		N

2.4	Limited current circuits		P
2.4.1	General requirements		P
2.4.2	Limit values	LCC be evaluated in approved switching power supplies, see appended table 1.5.1	P
	Frequency (Hz)		—
	Measured current (Ma)		—
	Measured voltage (V)		—
	Measured circuit capacitance (Nf or μ F)		—
2.4.3	Connection of limited current circuits to other circuits	LCC be evaluated in approved switching power supplies, see appended table 1.5.1	P

2.5	Limited power sources		P
	a) Inherently limited output		N
	b) Impedance limited output		N
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition	LAN port, WAN port, RJ11 ports	P
	Use of integrated circuit (IC) current limiters		N
	d) Overcurrent protective device limited output		—
	Max. Output voltage (V), max. Output current (A), max. Apparent power (VA)	(See appended table 2.5)	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Current rating of overcurrent protective device (A) :		
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2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	Reliable earthing terminal	P
2.6.2	Functional earthing	No functional earthing.	N
	Use of symbol for functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors	See table 1.5.1	P
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors	See table 1.5.1	P
	Rated current (A), cross-sectional area (mm ²), AWG		—
	Protective current rating (A), cross-sectional area (mm ²), AWG.....		
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min).....	The earth terminal of AC inlet to the farthest metal enclosure: U=0.275V, 8.6m Ω with 32A, 2 minutes.	P
2.6.3.5	Colour of insulation	Green-and-Yellow	P
2.6.4	Terminals	See below.	P
2.6.4.1	General	The earthing terminal in approved AC inlet is used as protective earthing terminal.	P
2.6.4.2	Protective earthing and bonding terminals	Reliable earthing terminal	P
	Rated current (A), type, nominal thread diameter (mm).....	See table 1.5.1.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	The earthing terminal in approved AC inlet is used as protective earthing terminal.	P
2.6.5	Integrity of protective earthing	See below.	P
2.6.5.1	Interconnection of equipment		P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N
2.6.5.3	Disconnection of protective earth	Protective earthing connections be disconnected after the relevant hazard is removed at the same time	P
2.6.5.4	Parts that can be removed by an operator		P

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.5	Parts removed during servicing	Protective earthing connections be disconnected after the relevant hazard is removed at the same time	P
2.6.5.6	Corrosion resistance	Complied.	P
2.6.5.7	Screws for protective bonding	Complied.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	Not reliance on telecommunication network or cable distribution system	N/A

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	Protection in primary circuits against over currents provided as an integral part of the equipment.	P
	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	The building installation is considered as providing short-circuit backup protection	P
2.7.4	Number and location of protective devices	FS1 approved in built-in switching power supply.	P
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel		N

2.8	Safety interlocks		N
2.8.1	General principles	No safety interlocks	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
	Protection against extreme hazard		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches, relays and their related circuits		N
2.8.7.1	Separation distances for contact gaps and their related circuits (mm)		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test		N

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

2.8.8	Mechanical actuators		N
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2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic material not used	P
2.9.2	Humidity conditioning	120 hours	P
	Relative humidity (%), temperature (°C)	93%, 40°C	—
2.9.3	Grade of insulation	Functional, basic, supplementary, double and reinforced insulation	P
2.9.4	Separation from hazardous voltages		P
	Method(s) used	Method 1 and Method 3	—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency	<30KHz	P
2.10.1.2	Pollution degrees	2	P
2.10.1.3	Reduced values for functional insulation	Functional insulation comply with 5.3.4c)	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		P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	Between primary and secondary circuit be evaluated in approved switching power supplies.	P
2.10.2.3	Peak working voltage	Between primary and secondary circuit be evaluated in approved switching power supplies.	P
2.10.3	Clearances	See below.	P
2.10.3.1	General	Considered.	P
2.10.3.2	Mains transient voltages	See below.	P
	a) AC mains supply	2500Vpeak	P
	b) Earthed d.c. mains supplies		N
	c) Unearthed d.c. mains supplies		N
	d) Battery operation		N

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits		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	Not receive external ringing signal from telecommunication networks	N
2.10.3.9	Measurement of transient voltage levels		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
2.10.4	Creepage distances		P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests.....	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	See below.	P
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	Optocoupler be evaluated in approved switching power supplies	P
2.10.5.5.	Cemented joints		N
2.10.5.6	Thin sheet material – General	Considered.	P
2.10.5.7	Separable thin sheet material	Separable thin sheet material used in transformer be evaluated in approved switching power supplies	P
	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		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test	Thin sheet material used in transformer be evaluated in approved switching power supplies	—
2.10.5.11	Insulation in wound components	Evaluated in approved switching power supplies	P
2.10.5.12	Wire in wound components		P
	Working voltage	Evaluated in approved switching power supplies	P
	a) Basic insulation not under stress		N
	b) Basic, supplementary, reinforced insulation		N
	c) Compliance with Annex U	Evaluated in approved switching power supplies	P
	Two wires in contact inside wound component; angle between 45° and 90°	Evaluated in approved switching power supplies	P
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
	- Supplementary, reinforced insulation		N
2.10.6	Construction of printed boards	Evaluated in approved switching power supplies	P
2.10.6.1	Uncoated printed boards	Evaluated in approved switching power supplies	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

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling	Evaluated in approved switching power supplies, see appended table 1.5.1	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	Evaluated in approved switching power supplies, see appended table 1.5.1	P
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		N

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	All the interconnecting cables and internal wires are adequate for the current they are intended to carry.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from sharp edges	P
3.1.3	Securing of internal wiring	The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of conductor insulation.	P
3.1.4	Insulation of conductors		N
3.1.5	Beads and ceramic insulators		N
3.1.6	Screws for electrical contact pressure	A screw engage at least two completethreads into a metal plate.	P
3.1.7	Insulating materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws	No such screws	N
3.1.9	Termination of conductors	See below.	P
	10 N pull test	10N	P
3.1.10	Sleeving on wiring	No sleeving	N

3.2	Connection to a mains supply		N
3.2.1	Means of connection	See below.	P
3.2.1.1	Connection to an a.c. mains supply	An appliance inlet for connection of a DETACHABLE POWER SUPPLY CORD	P

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.2	Connection to a d.c. mains supply	No connection to d.c. mains supply	N
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment	Not permanently connected equipment	N
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	Approved AC inlet, (see appended table 1.5.1)	P
3.2.5	Power supply cords	See below.	P
3.2.5.1	AC power supply cords	See table 1.5.1	P
	Type	See table 1.5.1	—
	Rated current (A), cross-sectional area (mm ²), AWG	See table 1.5.1	—
3.2.5.2	DC power supply cords		N
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage		
3.2.8	Cord guards		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		N
3.3.1	Wiring terminals	No 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
	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

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Clause	Requirement + Test	Result - Remark	Verdict

3.4	Disconnection from the mains supply		P
3.4.1	General requirement	See below.	P
3.4.2	Disconnect devices	Power plug used as disconnected device	P
3.4.3	Permanently connected equipment	Not permanently connected equipment	N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords	No such switch in flexible cords	N
3.4.6	Number of poles – single-phase and d.c. equipment	Disconnect both poles simultaneously	P
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	Power plug used as disconnected device	P
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N

3.5	Interconnection of equipment		P
3.5.1	General requirements	Considered.	P
3.5.2	Types of interconnection circuits	TNV-3 circuits	P
3.5.3	ELV circuits as interconnection circuits	No ELV.	N
3.5.4	Data ports for additional equipment	(See appended table 2.5)	P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N
	Angle of 10°	Mass < 7kg	N
	Test force (N)	The unit is not floor-standing.	N

4.2	Mechanical strength		P
4.2.1	General	See below	P
	Rack-mounted equipment.	Not rack-mounted equipment.	N
4.2.2	Steady force test, 10 N	For internal components.	P
4.2.3	Steady force test, 30 N	No internal enclosure.	N
4.2.4	Steady force test, 250 N	For external enclosure.	P
4.2.5	Impact test	500g, 1.3m, no hazards	P
	Fall test	Top side and bottom side of enclosure	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Swing test	Four vertical side of enclosure	P
4.2.6	Drop test; height (mm)		N
4.2.7	Stress relief test		N
4.2.8	Cathode ray tubes	No such tubes	N
	Picture tube separately certified		N
4.2.9	High pressure lamps	No high pressure lamps	N
4.2.10	Wall or ceiling mounted equipment; force (N)	50N for 1 min. After test, No hazards	P

4.3	Design and construction		P
4.3.1	Edges and corners	All coners are smooth and rounded	P
4.3.2	Handles and manual controls; force (N)	No such device	N
4.3.3	Adjustable controls	No adjustable controls.	N
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	P
4.3.5	Connection by plugs and sockets	Employed in a manner not likely to create a hazard due to misconnection	P
4.3.6	Direct plug-in equipment	Not direct plug-in equipment	N
	Torque		—
	Compliance with the relevant mains plug standard		N
4.3.7	Heating elements in earthed equipment	No such component	N
4.3.8	Batteries	Button cell	P
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery	(See appended table 4.3.8)	P
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery	Consumer grade battery.	P
4.3.9	Oil and grease	No oil and grease	N
4.3.10	Dust, powders, liquids and gases		N
4.3.11	Containers for liquids or gases		N
4.3.12	Flammable liquids		N
	Quantity of liquid (l)		N
	Flash point (°C)		N
4.3.13	Radiation	See below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.1	General	LEDs only for indication.	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		N
	Part, property, retention after test, flammability classification		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N
4.3.13.5	Lasers (including laser diodes) and LEDs	LEDs only for indication.	P
4.3.13.5.1	Lasers (including laser diodes)		N
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	LEDs only for indication.	P
4.3.13.6	Other types		N
4.4	Protection against hazardous moving parts		N
4.4.1	General	No moving parts	N
4.4.2	Protection in operator access areas		N
	Household and home/office document/media shredders		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		N
4.4.5	Protection against moving fan blades		N
4.4.5.1	General		N
	Not considered to cause pain or injury. A).....:		N
	Is considered to cause pain, not injury. B)		N
	Considered to cause injury. C)		N
4.4.5.2	Protection for users		N
	Use of symbol or warning		N
4.4.5.3	Protection for service persons		N
	Use of symbol or warning		N
4.5	Thermal requirements		P

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Clause	Requirement + Test	Result - Remark	Verdict

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

4.6	Openings in enclosures		P
4.6.1	Top and side openings	Side openings	P
	Dimensions (mm)	The any dimensions of openings are less than 5 mm.	—
4.6.2	Bottoms of fire enclosures	See below	P
	Construction of the bottom, dimensions (mm) ..	Openings in the bottom under an internal barrier	—
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
4.6.5	Adhesives for constructional purposes		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.	P
	Method 1, selection and application of components wiring and materials	Materials with the required flammability classes are used-see appended table 1.5.1 and 4.7	P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	Components in primary circuits, so requiring a fire enclosure.	P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General	See below.	P
4.7.3.2	Materials for fire enclosures	Metal enclosure	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.3	Materials for components and other parts outside fire enclosures		N
4.7.3.4	Materials for components and other parts inside fire enclosures	PCB rated V-1 or better	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4KV.	N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	See below.	P
5.1.2	Configuration of equipment under test (EUT)	See below.	P
5.1.2.1	Single connection to an a.c. mains supply	Considered.	P
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	Figure 5A.	P
5.1.4	Application of measuring instrument		P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V)	264V, 60Hz	—
	Measured touch current (Ma)	(see appended table 5.1)	—
	Max. Allowed touch current (Ma)	(see appended table 5.1)	—
	Measured protective conductor current (Ma)		—
	Max. Allowed protective conductor current (Ma) ..		—
5.1.7	Equipment with touch current exceeding 3,5 Ma		N
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		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

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Clause	Requirement + Test	Result - Remark	Verdict
	a) EUT with earthed telecommunication ports :		N
	b) EUT whose telecommunication ports have no reference to protective earth		N

5.2	Electric strength		P
5.2.1	General		P
5.2.2	Test procedure	(See appended table 5.2)	P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(See appended table 5.3)	P
5.3.2	Motors	No such component.	N
5.3.3	Transformers	Transformers be evaluated in approved switching power supply	P
5.3.4	Functional insulation	Complies with c).	P
5.3.5	Electromechanical components	No such component.	N
5.3.6	Audio amplifiers in ITE		N
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment		N
5.3.9	Compliance criteria for abnormal operating and fault conditions	(see appended table 5.3)	P
5.3.9.1	During the tests	No hazards.	P
5.3.9.2	After the tests	No hazards.	P

6	CONNECTION TO TELECOMMUNICATION NETWORKS		P
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		P
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements		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		P
6.2.1	Separation requirements		N

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2	Electric strength test procedure	See below	P
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test	See appended table 5.2	P
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		N
7.1	General	No connected to cable distribution system.	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
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N

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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).....		—
A.3	Hot flaming oil test (see 4.6.2)		N
A.3.1	Mounting of samples		N

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Clause	Requirement + Test	Result - Remark	Verdict
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		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		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		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		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V)		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position	Evaluated in approved switching power supply, see appended table 1.5.1	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection		—
C.1	Overload test		P
C.2	Insulation		P
	Protection from displacement of windings		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
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
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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	(See appended table 1.6.2)	P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction	Method A is used	P

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Clause	Requirement + Test	Result - Remark	Verdict
M.2	Method A	Test Data: Port 1 TIP1 to RING1: t1=2s, t2=6s, Vpp= 172V, Ipp=172/5000=34.4mA, Vdc=48V, Idc=48/5000=9.6mA Formula of ITS1, ITS2 $I_{TS1} = \frac{I_{pp}}{2\sqrt{2}} \text{ (for } t_1 \geq 1.2\text{s)}$ ITS1=12.164mA $I_{TS2} = \left[\frac{t_1}{t_2} \times I_{TS1}^2 + \frac{t_2 - t_1}{t_2} \times \frac{I_{dc}^2}{3.75^2} \right]^{1/2}$ ITS2=7.327mA Result: a) For normal operation: ITS1=12.164mA<16mA; b) For normal operation: ITS2=7.327mA<16mA; c) Under single fault conditions: C1 short circuit, U2 pin (4-5) short circuit,: no change, the related value as same as normal condition, ITS1 and/or ITS2<20mA	P
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		—

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Clause	Requirement + Test	Result - Remark	Verdict

Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		P
	- Preferred climatic categories	Evaluated in approved switching power supply, see appended table 1.5.1	P
	- Maximum continuous voltage		P
	- Combination pulse current		P
	Body of the VDR Test according to IEC60695-11-5.....		N
	Body of the VDR. Flammability class of material (min V-1).....		P

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
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		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

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Clause	Requirement + Test	Result - Remark	Verdict
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)		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		N
CC.1	General		N
CC.2	Test program 1.....		N
CC.3	Test program 2.....		N
CC.4	Test program 3.....		N
CC.5	Compliance.....		N
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N
DD.1	General		N
DD.2	Mechanical strength test, variable N.....		N
DD.3	Mechanical strength test, 250N, including end stops.....		N
DD.4	Compliance.....		N

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Clause	Requirement + Test	Result - Remark	Verdict

EE	ANNEX EE, Household and home/office document/media shredders		N
EE.1	General		N
EE.2	Markings and instructions		N
	Use of markings or symbols.....:		N
	Information of user instructions, maintenance and/or servicing instructions.....:		N
EE.3	Inadvertent reactivation test.....:		N
EE.4	Disconnection of power to hazardous moving parts:		N
	Use of markings or symbols.....:		N
EE.5	Protection against hazardous moving parts		N
	Test with test finger (Figure 2A)		N
	Test with wedge probe (Figure EE1 and EE2)		N

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Clause	Requirement + Test	Result - Remark	Verdict

Group differences (EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013)																																																																											
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																																																																								
Contents (A2: 2013)	Add the following: Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P																																																																								
Whole document (A2: 2013)	Delete all the "country" notes in the reference document according to the following list: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">2.7.1</td> <td style="width: 15%;">Note *</td> <td style="width: 15%;">2.10.3.1</td> <td style="width: 15%;">Note 2</td> <td style="width: 15%;">6.2.2</td> <td style="width: 15%;">Note</td> </tr> </table> <p>* Note of secretary: Text of Common Modification remains unchanged For special national conditions, see Annex ZB.</p>	2.7.1	Note *	2.10.3.1	Note 2	6.2.2	Note		P																																																																		
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General	Delete all the "country" notes in the reference document according to the following list: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">1.4.8</td> <td style="width: 15%;">Note 2</td> <td style="width: 15%;">1.5.1</td> <td style="width: 15%;">Note 2 & 3</td> <td style="width: 15%;">1.5.7.1</td> <td style="width: 15%;">Note</td> </tr> <tr> <td>1.5.8</td> <td>Note 2</td> <td>1.5.9.4</td> <td>Note</td> <td>1.7.2.1</td> <td>Note 4, 5 & 6</td> </tr> <tr> <td>2.2.3</td> <td>Note</td> <td>2.2.4</td> <td>Note</td> <td>2.3.2</td> <td>Note</td> </tr> <tr> <td>2.3.2.1</td> <td>Note 2</td> <td>2.3.4</td> <td>Note 2</td> <td>2.6.3.3</td> <td>Note 2 & 3</td> </tr> <tr> <td>2.7.1</td> <td>Note</td> <td>2.10.3.2</td> <td>Note 2</td> <td>2.10.5.13</td> <td>Note 3</td> </tr> <tr> <td>3.2.1.1</td> <td>Note</td> <td>3.2.4</td> <td>Note</td> <td>3.2.5.1</td> <td>Note 2</td> </tr> <tr> <td>4.3.6</td> <td>Note 1 & 2</td> <td>4.7</td> <td>Note 4</td> <td>4.7.2.2</td> <td>Note</td> </tr> <tr> <td>4.7.3.1</td> <td>Note 2</td> <td>5.1.7.1</td> <td>Note 3 & 4</td> <td>5.3.7</td> <td>Note 1</td> </tr> <tr> <td>6</td> <td>Note 2 & 5</td> <td>6.1.2.1</td> <td>Note 2</td> <td>6.1.2.2</td> <td>Note</td> </tr> <tr> <td>6.2.2</td> <td>Note</td> <td>6.2.2.1</td> <td>Note 2</td> <td>6.2.2.2</td> <td>Note</td> </tr> <tr> <td>7.1</td> <td>Note 3</td> <td>7.2</td> <td>Note</td> <td>7.3</td> <td>Note 1 & 2</td> </tr> <tr> <td>G.2.1</td> <td>Note 2</td> <td>Annex H</td> <td>Note 2</td> <td></td> <td></td> </tr> </table>	1.4.8	Note 2	1.5.1	Note 2 & 3	1.5.7.1	Note	1.5.8	Note 2	1.5.9.4	Note	1.7.2.1	Note 4, 5 & 6	2.2.3	Note	2.2.4	Note	2.3.2	Note	2.3.2.1	Note 2	2.3.4	Note 2	2.6.3.3	Note 2 & 3	2.7.1	Note	2.10.3.2	Note 2	2.10.5.13	Note 3	3.2.1.1	Note	3.2.4	Note	3.2.5.1	Note 2	4.3.6	Note 1 & 2	4.7	Note 4	4.7.2.2	Note	4.7.3.1	Note 2	5.1.7.1	Note 3 & 4	5.3.7	Note 1	6	Note 2 & 5	6.1.2.1	Note 2	6.1.2.2	Note	6.2.2	Note	6.2.2.1	Note 2	6.2.2.2	Note	7.1	Note 3	7.2	Note	7.3	Note 1 & 2	G.2.1	Note 2	Annex H	Note 2				P
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General (A1:2010)	In IEC 60950-1:2005/A1 delete all the "country" notes according to the following list: - 1.5.7.1: Note - 6.1.2.1: Note 2 - 6.2.2.1: Note 2 - EE.3: Note		N																																																																								
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P																																																																								

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Clause	Requirement + Test	Result - Remark	Verdict
1.2.3 (A1:2010)	<p>Add the following definition:</p> <p>1.2.3.Z1</p> <p>PORTABLE SOUND SYSTEM</p> <p>small battery powered audio equipment:</p> <ul style="list-style-type: none"> - whose prime purpose is to listen to recorded or broadcasted sound; and - that uses headphones or earphones that can be worn in or on or around the ears; and - that allows the user to walk around <p>NOTE Examples are mini-disk or CD players; MP3 audio players or similar equipment.</p>		N
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>		N
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>		P
1.7.2.1	<p>Add the following NOTE:</p> <p>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</p>		N

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A1:2010)	<p>Delete NOTE Z1.</p> <p>Add the following paragraph at the end of the subclause:</p> <p>In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.</p>		N
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		N
2.7.2	This subclause has been declared 'void'.		N
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N

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Clause	Requirement + Test	Result - Remark	Verdict												
3.2.5.1	<p>Replace</p> <p>“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”.</p> <p>In Table 3B, replace the first four lines by the following:</p> <table border="0"> <tr> <td> Up to and including 6</td> <td> </td> </tr> <tr> <td>0,75^{a)} </td> <td></td> </tr> <tr> <td> Over 6 up to and including 10</td> <td> (0,75)^{b)}</td> </tr> <tr> <td>1,0 </td> <td></td> </tr> <tr> <td> Over 10 up to and including 16</td> <td> (1,0)^{c)} 1,5</td> </tr> <tr> <td> </td> <td></td> </tr> </table> <p>In the conditions applicable to Table 3B delete the words “in some countries” in condition^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6		0,75 ^{a)}		Over 6 up to and including 10	(0,75) ^{b)}	1,0		Over 10 up to and including 16	(1,0) ^{c)} 1,5				N
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														
3.2.5.1 (A2: 2013)	<p>Add the following Note:</p> <p>NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD.</p>		N												
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table border="0"> <tr> <td> Over 10 up to and including 16</td> <td> 1,5 to 2,5 </td> </tr> <tr> <td>1,5 to 4 </td> <td></td> </tr> </table> <p>Delete the fifth line: conductor sizes for 13 to 16 A.</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4			N								
Over 10 up to and including 16	1,5 to 2,5														
1,5 to 4															
4.3.13.6	<p>Add the following NOTE:</p> <p>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.</p>		N												
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to :</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>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).</p> <p>Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>		N												

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Clause	Requirement + Test	Result - Remark	Verdict
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>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.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>		N
Bibliography	<p>Add the following standards:</p> <p>EN 50332-1:2000, 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"</p> <p>EN 50332-2:2003, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Matching of sets with headphones if either or both are offered separately</p> <p>Add the following notes for the standards indicated:</p> <p>IEC 60127 NOTE Harmonized in EN 60127 series (not modified).</p> <p>IEC 60369-2-1 NOTE Harmonized as HD 60369-2-1:2005 (modified).</p> <p>IEC 60364-4-41 NOTE Harmonized as HD 384.4.41 S2:1996 (modified).</p> <p>IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified).</p> <p>IEC 60664-4 NOTE Harmonized as EN 60664-4:2006 (not modified).</p> <p>IEC 60728-11 NOTE Harmonized as EN 60728-11:2005 (modified).</p> <p>IEC 60896-21 NOTE Harmonized as EN 60896-21:2004 (not modified).</p> <p>IEC 60896-22 NOTE Harmonized as EN 60896-22:2004 (not modified).</p> <p>IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified).</p>		N

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>IEC 61140 NOTE Harmonized as EN 61140:2002 (not modified).</p> <p>IEC 61558-1 NOTE Harmonized as EN 61558-1:2005 (not modified).</p> <p>IEC 61643-21 NOTE Harmonized as EN 61643-21:2001 (not modified).</p> <p>IEC 61643-311 NOTE Harmonized as EN 61643-311:2001 (not modified).</p> <p>IEC 61643-321 NOTE Harmonized as EN 61643-321:2002 (not modified).</p> <p>IEC 61643-331 NOTE Harmonized as EN 61643-331:2003 (not modified).</p> <p>IEC 61965 NOTE Harmonized as EN 61965:2003 (not modified).</p> <p>ISO 4892 NOTE Harmonized in EN ISO 4892 series (not modified).</p>		
Bibliography (A1:2010)	Add the following note for the standard indicated: IEC 60908 NOTE Harmonized as EN 60908.		N
ZA (A2: 2013)	Normative references to international publications with their corresponding European publications		N
ZB	Special national conditions Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. NOTE If it affects harmonization, it forms part of the European Standard. For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.		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
1.2.13.14 (A11:2009)	Add as new SNC: In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		N
1.5.7.1 (A11:2009)	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.		N

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Clause	Requirement + Test	Result - Remark	Verdict
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N
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 (A2: 2013)	<p>In Denmark, Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N
1.7.5 (A2: 2013)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a.</p> <p>Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N
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

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Clause	Requirement + Test	Result - Remark	Verdict
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N
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	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A 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</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998 Plug Type 25 3L+N+PE 230/400 V, 16 A 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</p>		N

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1 (A2: 2013)	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N
3.2.1.1	<p>In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In Ireland , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N
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 mm ² 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

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> ○ is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and ○ has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and ○ is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT. 		N

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Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation 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</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14. 		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
7.3 (A11:2009)	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.		N
7.3	In Norway , for installation conditions see EN 60728-11:2005.		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	<p>A-deviations</p> <p>A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CENELEC national member.</p> <p>This European Standard falls under Directives RTTED (1999/5/EC) and LVD (2006/95/EC).</p> <p>NOTE (from CEN/CENELEC IR Part 2:2002 , 2.17) Where standards fall under EC Directives, it is the view of the Commission of the European Communities (OJ No C 59, 1982-03-09) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive.</p> <p>A-deviations in an EFTA-country are valid instead of the relevant provisions of the European Standard in that country until they have been removed.</p>		N
1.5.1	<p>Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.)</p> <p>Add the following:</p> <p>NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.</p>		N
1.7.2.1	<p>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).</p> <p>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.</p> <p>Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.</p>		N
1.7.13	<p>Switzerland (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries)</p> <p>Annex 2.15 of SR 814.81 applies for batteries.</p>		N
(A12:2011)	<p>Zx. Protection against excessive sound pressure from personal music players</p>		N

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

	<p>Zx.1 General</p> <p>This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for personal use, that:</p> <ul style="list-style-type: none"> - is designed to allow the user to listen to recorded or broadcast sound or video; and - primarily uses headphones or earphones that can be worn in or on or around the ears; and - allows the user to walk around while in use. <p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA\$s or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"> - while the personal music player is connected to an external amplifier; or - while the headphones or earphones are not used. <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> - hearing aid equipment and professional equipment; <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p>		N
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EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>- analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015</p> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		N

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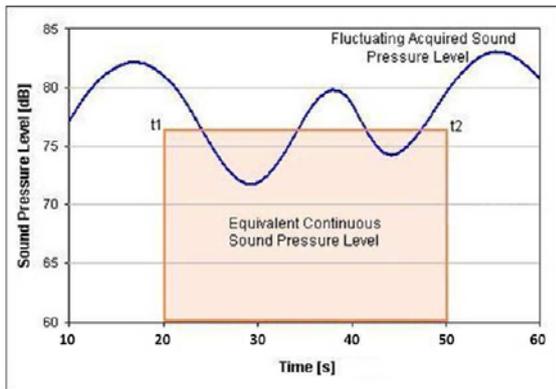
EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.2 Equipment requirements</p> <p>No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"> - equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and - a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ul style="list-style-type: none"> a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p>		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <p>1) equipment provided as a package (player with its listening device), the acoustic output shall be \leq 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and</p> <p>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be \leq 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> - the symbol of Figure 1 with a minimum height of 5 mm; and - the following wording, or similar: <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p> <div style="text-align: center;">  </div> <p>Figure 1 – Warning label (IEC 60417-6044)</p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N
	<p>Zx.4 Requirements for listening devices (headphones and earphones)</p>		N
	<p>Zx.4.1 Wired listening devices with analogue input</p> <p>With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA - 75 mV correspond with 85dBA - 27 mV and 100 dBA - 150 mV.</p>		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.4.2 Wired listening devices with digital input</p> <p>With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N
	<p>Zx.4.3 Wireless listening devices</p> <p>In wireless mode:</p> <ul style="list-style-type: none"> - with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and - respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and - with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above-mentioned programme simulation noise, <p>the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.</p> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N
	<p>Zx.5 Measurement methods</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N

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

<p>Annex Zx (A12:2011)</p>	<p>Significance of $L_{Aeq,T}$ in EN 50332-1 and additional information</p> <p>$L_{Aeq,T}$ is derived from the general formula for equivalent sound pressure:</p> $L_{eq} = 10 \log \left[\frac{1}{t_2 - t_1} \int_{t_1}^{t_2} \frac{p_A^2}{p_0^2} dt \right]$ <p>This can be represented graphically as follows:</p>  <p>In EN 50332-1 the measurement time interval ($t_2 - t_1$) is 30 s.</p> <p>In practice, and for the purposes of listening to personal music player content, $L_{Aeq,T}$ has a time interval T ($t_2 - t_1$) in the order of minutes / hours and not seconds.</p> <p>6.5 (Limitation value) of EN 50332-1:2000 acknowledges this fact and states that the 100 dB limit equates to a long time average of 90 dB $L_{Aeq,T}$. By using the IEC 60268-1 "programme simulation noise" test signal, this also takes the spectral content into account.</p> <p>The SCENHIR¹ report states that 80 dBA is considered safe for an exposure time of 40 h/week. Most persons do not listen to 40 h/week to their personal music player. In addition, not all music tracks are at the same level of the simulated noise signal. Whilst modern music tends to be at around the same level, most of the available music is at a lower average level. Therefore, the working group² considers a value of 85 dBA to be safe for an overwhelming majority of the users of personal music players.</p>		<p>N</p>
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EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	¹ SCENIHR opinion of 23 Sept 2008: Potential health risks of exposure to noise from personal music players and mobile phones including a music playing function ² CENELEC TC108X/WG03		N

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

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⁾	
Plug of power cord	Shangyu Jintao Electron Co., Ltd.	JT006A	AC 250V, 13A	BS 1363-1	 Licence No: 1120	
Flexible cable of power cord	Shangyu Jintao Electron Co., Ltd.	H05VV-F	3 x 0.75 mm ²	EN 50525-2-11	VDE 40013419	
Connector of power cord	Shangyu Jintao Electron Co., Ltd.	JT-ST3	AC 250V, 10A	IEC 60320-1	VDE 40025292	
AC inlet	Rong Feng Industrial Co., Ltd.	SS-120	AC 250V, 10A, 70°C	EN 60320-1	VDE 40028101	
Switch	Rong Feng Industrial Co., Ltd.	RF-1003	250V, 10(4)A, 8A / 80A, 85°C	EN 61058-1	VDE 40030309	
Earthing wire	XIAMEN HUILONG CABLE CO LTD	1015	600Vac, 18AWG, 105°C	UL 758	UL E225375	
(Alt.)	Interchangeable	Interchangeable	600Vac, 18AWG, 105°C	UL 758	UL	
Input wire to switching power supply	XIAMEN HUILONG CABLE CO LTD	1007	300Vac, 18AWG, 80°C	UL 758	UL E225375	
(Alt.)	Interchangeable	Interchangeable	300Vac, 18AWG, 80°C	UL 758	UL	
Switching power supply	MEAN WELL Enterprises Co., Ltd.	EPS-25-12	Input: AC 100-240V, 0.6A, 50/60Hz Output: 12VDC, 2.1A	EN 60950-1: 2006+A11:2009+A1 :2010+A12:2011+A 2:2013	 CB Report No.: 10035879 002 Certificate Number: R 50225053	
Primary connector of AC input wire	ZHEJIANG HONGXING ELECTRICAL CO LTD	HX39600-3Y	7.5A, 250V	UL 1977	UL E228500	
MYLAR under the power switch supply	FU WEI INSULATION TECHNOLOGY CO LTD	FUWEI 155-1	155°C	UL 1446	UL E469673	
Output wire to switching power supply	XIAMEN HUILONG CABLE CO LTD	1007	20AWG, 80°C	UL 758	UL E225375	

EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
SELV circuit PCB	GUANGZHOU FAST-PRINT CIRCUIT TECHNOLOGY CO LTD	M11	V-0, 130°C	UL 796	UL E204460
(Alt.)	interchangeable	Interchangeable	V-1 or better, Min.130°C	UL 796	UL
Button cell	SHENZHEN GAONENGDA BATTERY CO LTD	CR1220	3V,40mAh Max Abnormal Charging Current: 10mA Max Abnormal Charging Voltage: 3.5Vdc	UL 1642	UL MH30114
Metal enclosure	interchangeable	interchangeable	Min thickness: 1.0mm	EN 60950-1: 2006+A11:2009+A12:2010+A12:2011+A2:2013	Tested with appliance
1) An asterisk indicates a mark which assures the agreed level of surveillance					
Supplementary information:					

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

1.6.2	TABLE: Electrical data (in normal conditions)								P
Input				Output			Fuse #	Ifuse (mA)	Condition/status
U (V)	I (mA)	Irated (A)	P (W)	U (V)	I (A)	P (W)	--	--	
90/50Hz	88	--	3.9	--	--	--	FS1	88	Max. Normal operating condition
90/60Hz	88	--	3.9	--	--	--	FS1	88	Max. Normal operating condition

EN 60950-1									
Clause	Requirement + Test						Result - Remark		Verdict
100/50Hz	82	0.5	4.0	--	--	--	FS1	82	Max. Normal operating condition
100/60Hz	82	0.5	4.0	--	--	--	FS1	82	Max. Normal operating condition
240/50Hz	54	0.5	4.2	--	--	--	FS1	54	Max. Normal operating condition
240/60Hz	54	0.5	4.2	--	--	--	FS1	54	Max. Normal operating condition
264/50Hz	54	--	4.3	--	--	--	FS1	54	Max. Normal operating condition
264/60Hz	54	--	4.3	--	--	--	FS1	54	Max. Normal operating condition
Supplementary information:									

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				N
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
--	--	--	--	--	
supplementary information:					

2.1.1.5 c) 2)	TABLE: stored energy		N
Capacitance C (µF)	Voltage U (V)		Energy E (J)
--	--		--
supplementary information:			

2.1.1.7	TABLE: discharge test			P
Condition	τ calculated (s)	τ measured (s)	t u→0V	Comments
--	--	--	--	--
supplementary information: Evaluated in approved power switching supply report.				

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)	max. Voltage (V) (normal operation)		Voltage Limiting Components	
	V peak	V d.c.		
--	--	--	--	
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	--	--	
	--	--	
supplementary information:			
Evaluated in approved power switching supply report.			

2.4	TABLE: limited current circuit measurement			P
Location	Voltage (V)	Current (Ma)	Comments	
--	--	--	--	
supplementary information: Evaluated in approved power switching supply report.				

2.5	TABLE: limited power sources					P
Circuit output tested: LAN port, WAN port, RJ11 ports						
Measured Uoc (V) with all load circuits disconnected : see below						
	Uoc:(V)	Isc (A)		VA		
		Meas.	Limit	Meas.	Limit	
RJ11 port						
Normal operation	47.0	0	8	0	100	
R731 short circuit	47.0	0	8	0	100	
WAN port						
WAN port all pins to earth	0	0	8	0	100	
R131	0	0	8	0	100	
LAN port,						
LAN port all pins to earth:	0	0	8	0	100	
R120	0	0	8	0	100	
Supplementary information:						

2.6.3.4 and 2.6.1	TABLE: ground continue test			P
Location	resistant measures (Ω)	comments		
--	--	--		
supplementary information: see clause 2.6.3.4				

2.10.2	Table: working voltage measurement	P

EN 60950-1							
Clause	Requirement + Test				Result - Remark	Verdict	
Location	RMS voltage (V)		Peak voltage (V)		Comments		
--	--		--		--		
supplementary information:							
Primary circuit and secondary circuit be evaluated in approved power switching supplies							
2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P	
Clearance (cl) and creepage distance (cr) at/of/between:		U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:							
L to N of inlet		420	240	1.5	12	2.5	12
Basic/supplementary:							
T1 core to top internal metal enclosure (PE)		420	240	2.0	12.80	2.5	12.80
TNV trace to enclosure		120	120	1.0	4.0	1.5	4.0
Reinforced:							
--		--	--	--	--	--	--
Supplementary information: primary circuit to secondary circuit for power board has been evaluated in approved power switching supplies.							

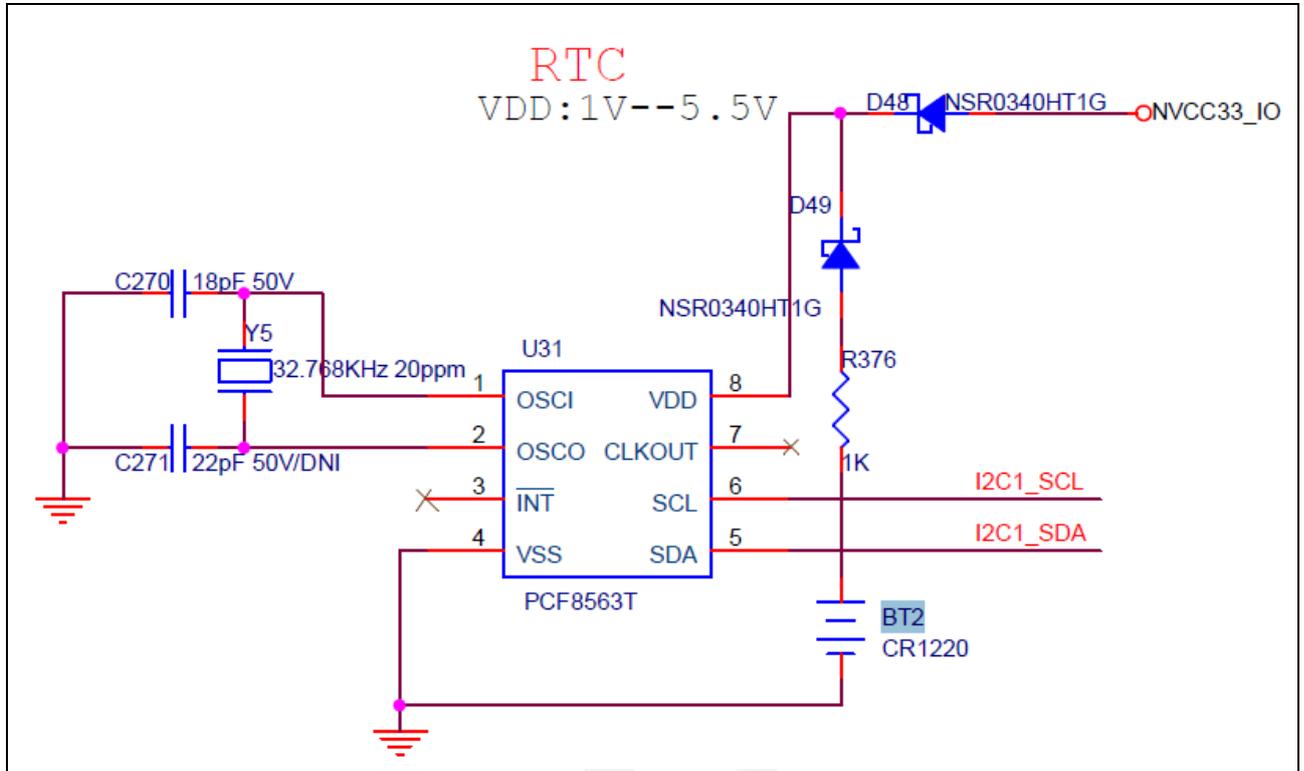
2.10.5	TABLE: Distance through insulation measurements					N	
Distance through insulation (DTI) at/of:			U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Supplementary information:							

4.3.8	TABLE: Batteries								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available					Yes			-	
Is it possible to install the battery in a reverse polarity position?					No			-	
Non-rechargeable batteries				Rechargeable batteries					
Discharging			Un-intentional charging	Charging		Discharging		Reversed charging	
Meas. Current (Ma)	Manuf. Specs (Ma)			Meas. Current (Ma)	Manuf. Specs (Ma)	Meas. Current (Ma)	Manuf. Specs (Ma)	Meas. Current (Ma)	Manuf. Specs (Ma)
Max. current during normal condition	--	--	0mA ¹⁾	--	--	--	--	--	--

EN 60950-1									
Clause	Requirement + Test					Result - Remark			Verdict
Max. current during D49 short	--	--	3mA ²⁾	--	--	--	--	--	--
1) When D49 short circuit, I=3.3mA. (Max. Abnormal charging current=10mA)									
Test results:									Verdict
- Chemical leaks						No chemical leaks affecting required insulation.			P
- Explosion of the battery						No explosion.			P
- Emission of flame or expulsion of molten metal						No emission of flame or expulsion of molten metal.			P
- Electric strength tests of equipment after completion of tests									N
Supplementary information:									

4.3.8	TABLE: Batteries	P
Battery category.....: Button cell		
Manufacturer.....: SHENZHEN GAONENGDA BATTERY CO LTD		
Type / model.....: CR1220		
Voltage.....: 3V		
Capacity.....: 40mAh		
Tested and Certified by (incl. Ref. No.).....: UL MH30114		
Circuit protection diagram: See below		

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



MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	In the battery compartment
Language(s)	English
Close to the battery	No
In the servicing instructions	Yes
In the operating instructions	Yes

4.5	TABLE: Thermal requirements				P	
	Supply voltage (V)	90V 60HZ Horizontal	264V 60HZ Horizontal		—	
	Ambient T _{min} (°C)	25.0	Shift to 40	25.1	—	
	Ambient T _{max} (°C)	25.1		25.2	Shift to 40	—
	Maximum measured temperature T of part/at:	T (°C)			Allowed Tmax (°C)	
	Ambient	25.0	40.0	25.1	40.0	--
	Switch	27.1	42.1	26.9	41.8	85
	AC input wire	32.7	47.7	30.8	45.7	80
	U1 of PCB S2	102.2	117.2	89.7	104.6	130
	T1 core of SPS	45.1	60.1	43.1	58.0	110

EN 60950-1							
Clause	Requirement + Test			Result - Remark		Verdict	
T1 winding of SPS	45.9	60.9	44.5	59.4	110		
U16 of the main PCB	47.3	62.3	44.8	59.7	130		
PCB near button cell	45.2	60.2	42.1	57.0	130		
U1 of PCB O2	44.2	59.2	39.4	54.3	130		
Top of metal enclosure	32.1	47.1	29.1	44.0	70		
Bottom of metal enclosure	30.4	45.4	28.4	43.3	70		
Supplementary information:							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
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Supplementary information: SPS: Switch power supply							

4.5	TABLE: Thermal requirements					P		
	Supply voltage (V)	90V 60HZ vertical		264V 60HZ vertical		—		
	Ambient T _{min} (°C)	25.0	Shift to 40	25.1	Shift to 40	—		
	Ambient T _{max} (°C)	25.1		25.2		—		
	Maximum measured temperature T of part/at:	T (°C)				Allowed Tmax (°C)		
	Ambient	25.0	40.0	25.1	40.0	--		
	Switch	27.3	42.3	27.3	42.2	85		
	AC input wire	32.0	47.0	32.6	47.5	80		
	U1 of PCB S2	101.0	116	89.7	104.6	130		
	T1 core of SPS	45.3	60.3	44.3	59.2	110		
	T1 winding of SPS	44.5	59.5	45.3	60.2	110		
	U16 of the main PCB	46.3	61.3	45.5	60.4	130		
	PCB near button cell	44.1	59.1	42.6	57.5	130		
	U1 of PCB O2	43.6	58.6	40.3	55.2	130		
	Top of metal enclosure	32.6	47.6	31.3	46.2	70		
	Bottom of metal enclosure	30.9	45.9	28.9	43.8	70		
Supplementary information:								
	Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
Supplementary information: SPS: Switch power supply								

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Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm)	≤ 2 mm	—
Part	Test temperature (°C)	Impression diameter (mm)	
Primary connector of AC input wier: (Manufacturer : ZHEJIANG HONGXING ELECTRICAL CO LTD. Model: HX39600-3Y)	125	1.7mm	
Supplementary information: The bobbin of transformer is evaluated in approved power switching supplies			

4.6	TABLE: Openings in enclosures		P
Location	dimensions	Comments	
--	--	--	
Supplementary information:			
See clause 4.6			

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
--	--	--	--	--	--
Supplementary information: see appended table 1.5.1					
1) Openings that do not exceed 5 mm in any dimension					
2) Openings that do not hazardous voltage and energy hazard within 5° vertical projection.					
3) Metal bottoms of fire encloses conforming to the dimensional limits of any line in Table 4D.					

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
L/N to metal enclosure (PE)	0.32	3.5	Switch "e" opened	
L/N to secondary terminal (all RJ11/LAN port, WAN port)	0.12	0.25	Switch "e" closed	
supplementary information:				
Test voltage: 264V, 60Hz				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
Functional:				

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Clause	Requirement + Test	Result - Remark	Verdict
L to N (fuse opened)		AC 1500	No
Basic:			
L/N to metal enclosure		AC 1500	No
TNV circuit to metal enclosure		AC 1500	No
Reinforced:			
L/N to RJ11 ports		AC 3000	No
L/N to LAN port		AC 3000	No
L/N to WAN port		AC 3000	No
Supplementary information:			
The electric strength of switching power supply be approved by TUV			

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)				24.7	—
	Power source for EUT: Manufacturer, model/type, output rating				See page 2	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (mA)	Observation
R35 of main PCB	S-c	240	30mins	FS1	54	The EUT work normally, no hazards.
C174 of main PCB	S-c	240	30mins	FS1	54	The EUT work normally, no hazards.
U7(Pin1-6) of main PCB	S-c	240	30mins	FS1	54	The EUT work normally, no hazards.
C112 of main PCB	S-c	240	30mins	FS1	30	EUT shut down immediately, recoverable, no hazards.
R168 of main PCB	S-c	240	30mins	FS1	54	The EUT work normally, no hazards.
Openings	Blocked	240	2hours	FS1	54	After 2hours the temperature was steady, the max.temperature is T1 winding of SPS: 64.7°C; U16 of the main PCB: 50.9°C Ambient: 24.7°C. No hazard.
Supplementary information: S-c=Short circuit						
The fault condition tests of power board have been tested and evaluated in TUV test report.						
SPS: Switch power supply						

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Clause	Requirement + Test			Result - Remark			Verdict
C.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
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Loc.	Tested insulation			Test voltage/ V	Measure d clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
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supplementary information:							
Transformer be evaluated in switching power supply.							

EUT PHOTOS

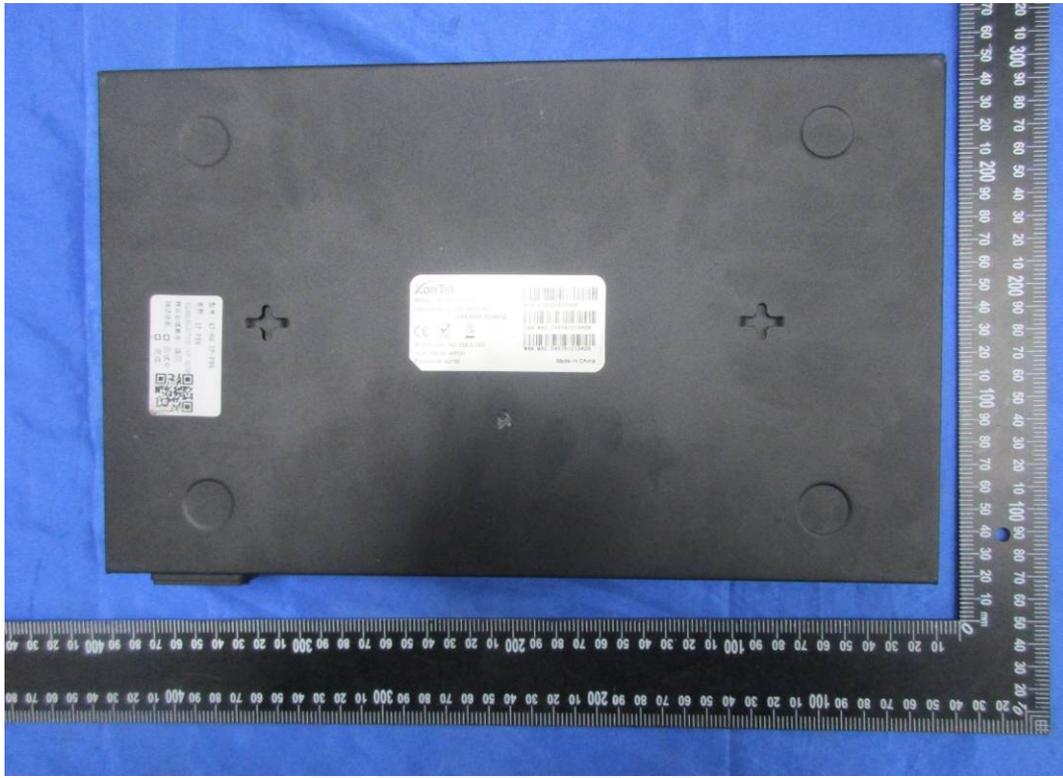
All view of EUT



Top view of EUT (front ports view)



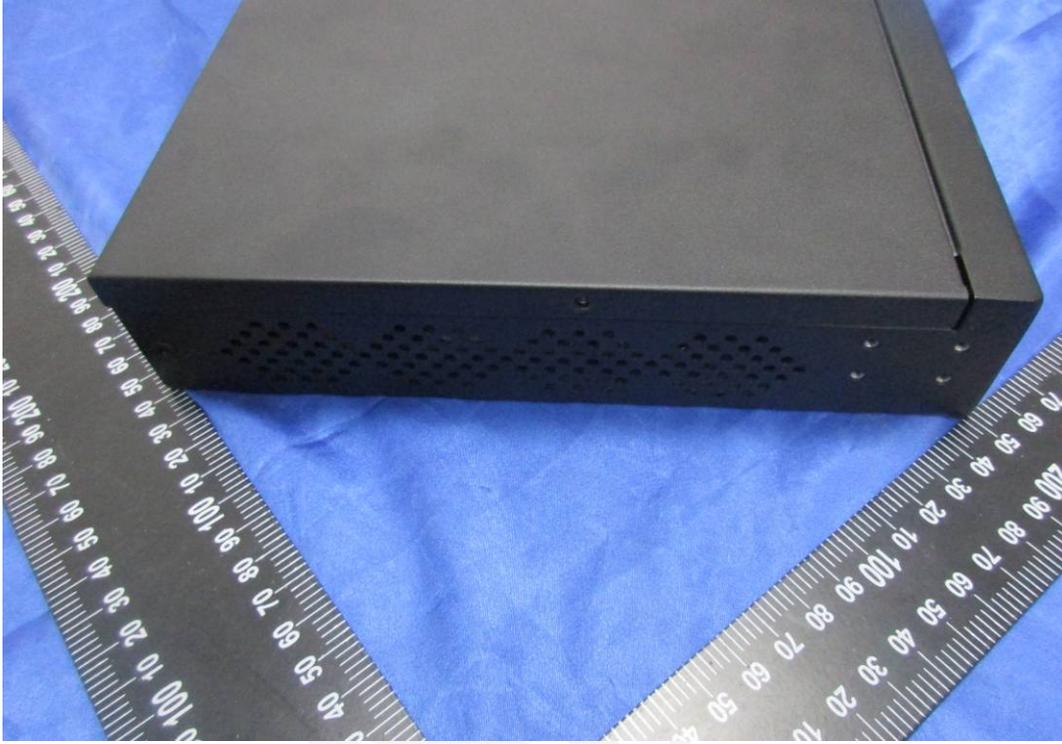
Bottom view of EUT



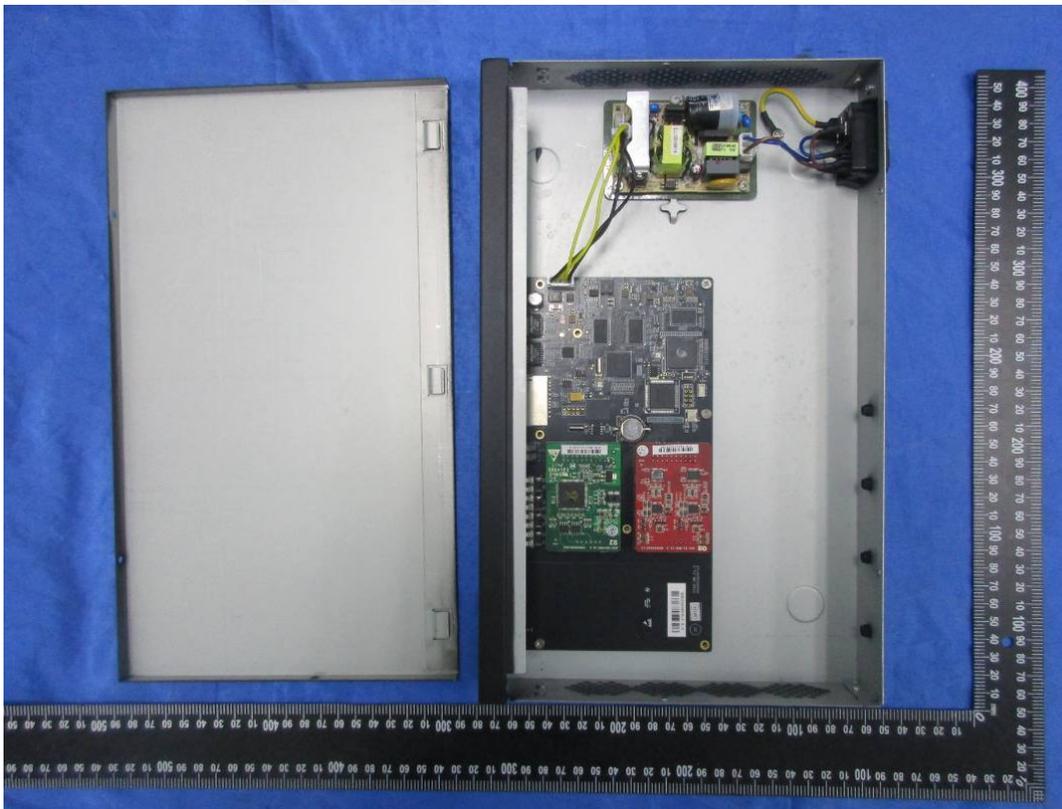
Back view of EUT



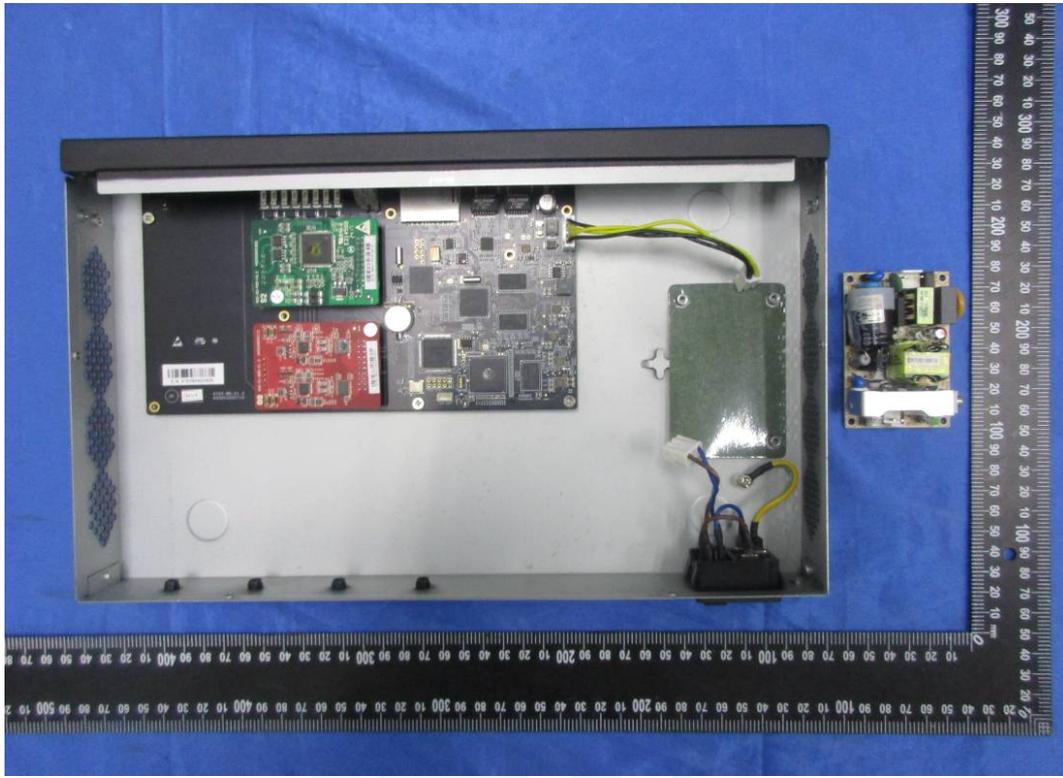
Side view of EUT



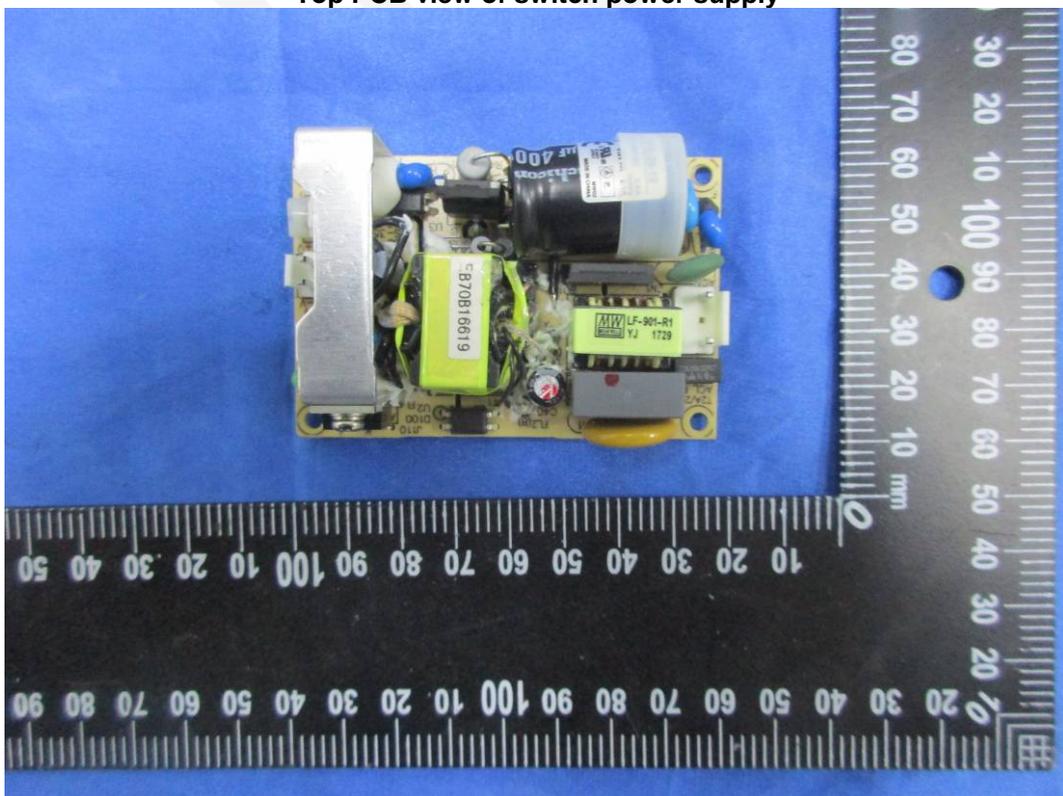
Uncover view of EUT



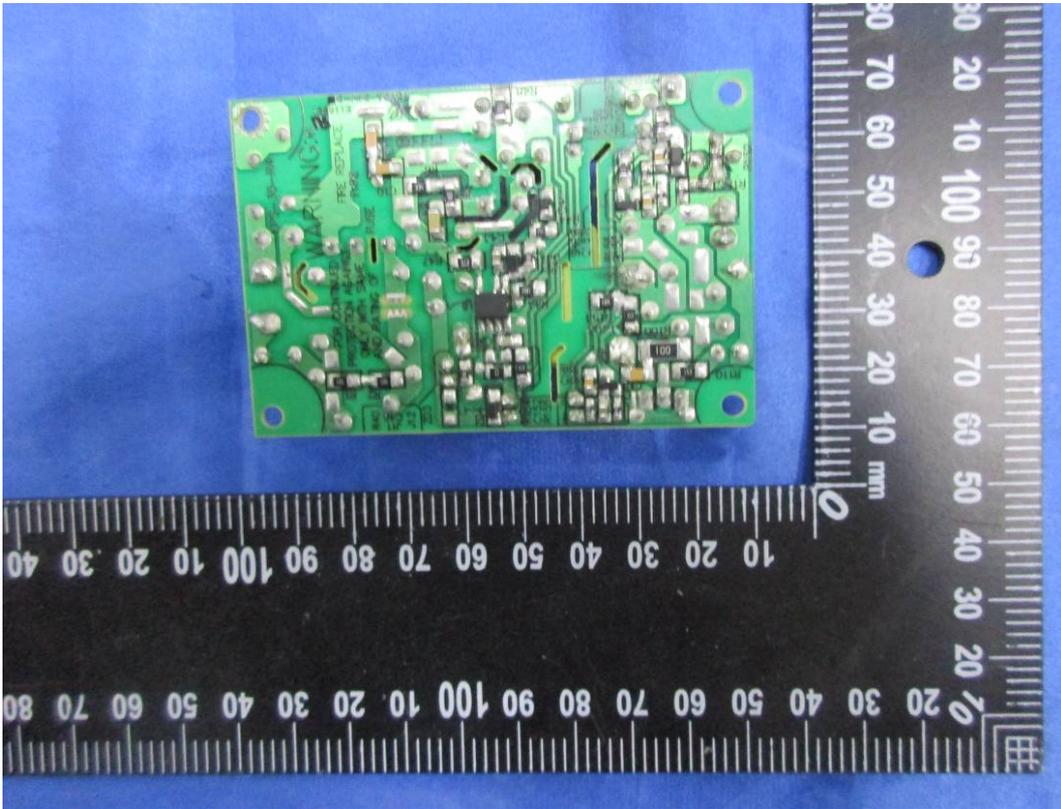
Remove the switch power supply PCB view of EUT



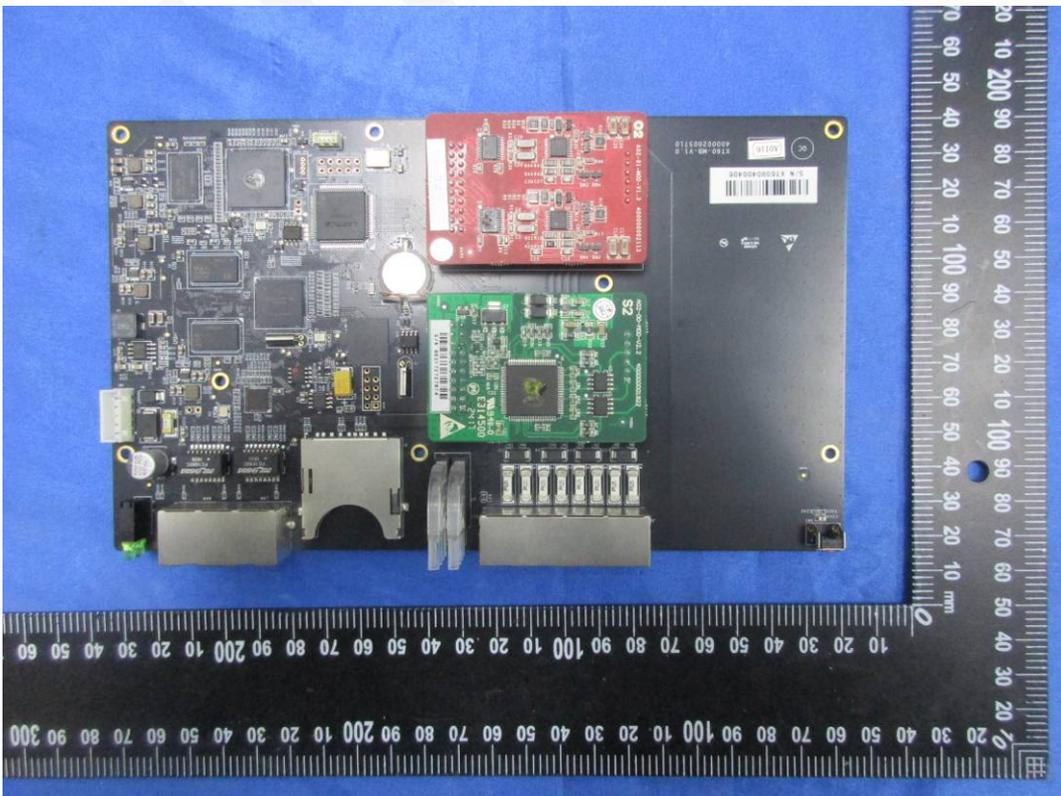
Top PCB view of switch power supply



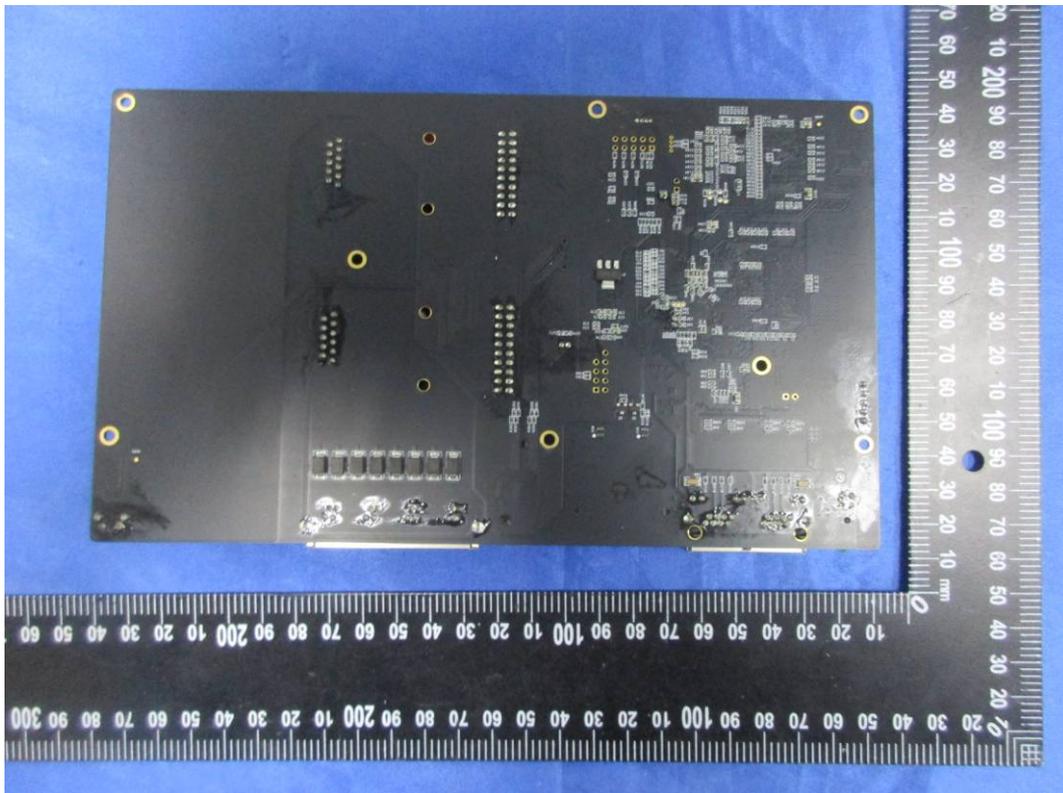
Bottom PCB view of switch power supply



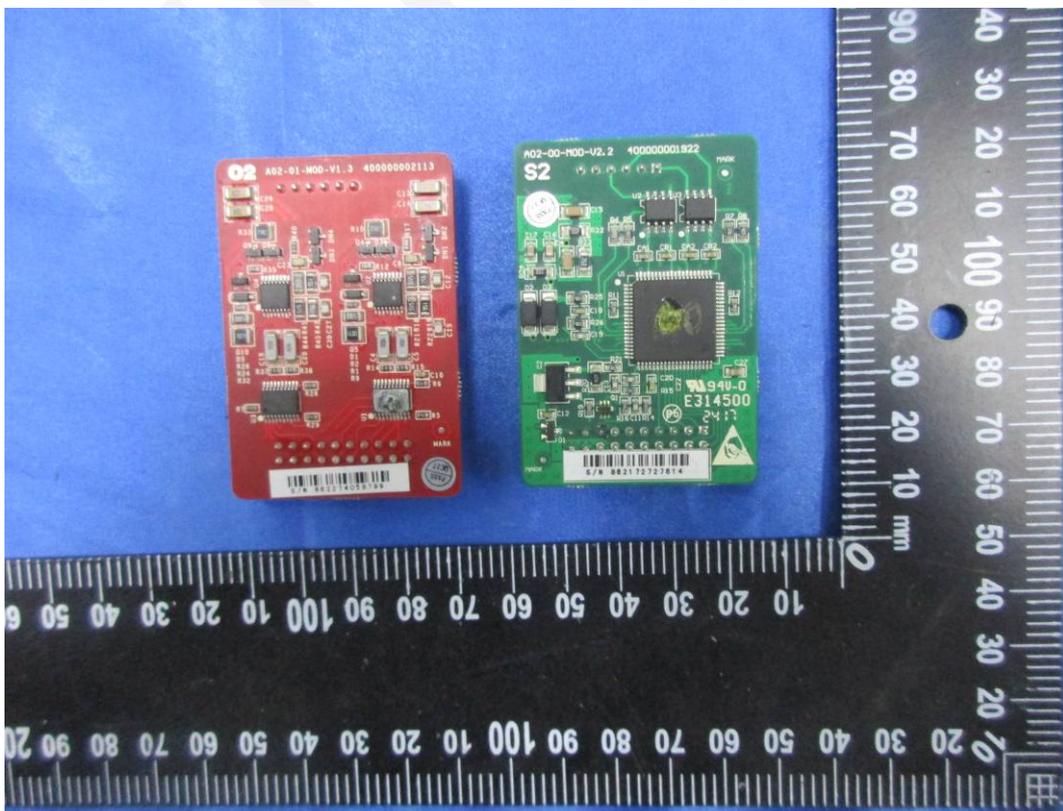
Top view of main PCB



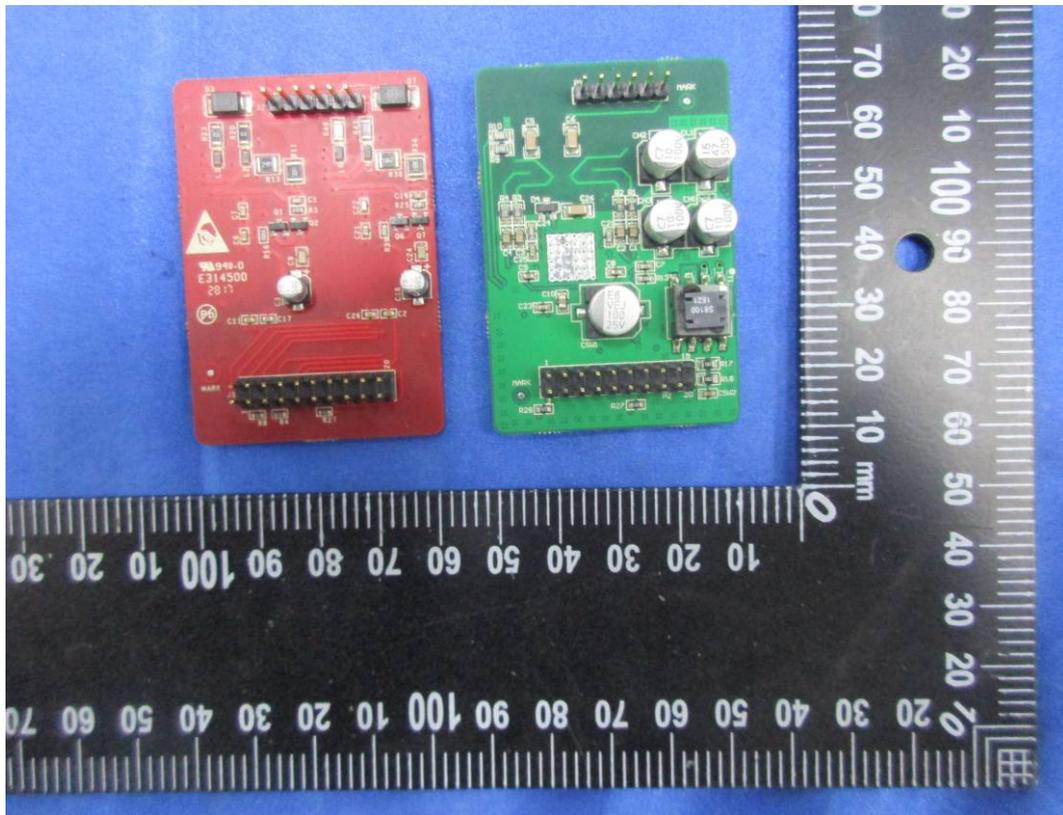
Bottom view of main PCB



Top view of module PCB



Bottom view of module PCB



Power cord view



Appendix B – Test equipments list

Equipment Description	Model No.	Equipment No.	Manufacturer	Last Cal	Cal Due
AC power system	HPC3145	T-08-SF191	N/A	2017-05-05	2018-05-05
Digital CC&CV DC power supply	WY5015	T-08-EE127	EVERFINE	2018-03-26	2019-03-26
Hybrid Recorder	DR240	T-08-SF008	YOKOGAWA	2018-03-26	2019-03-26
Hygrothermograph	HTC-1	T-08-QA073	Victor	2018-03-17	2019-03-17
Power meter	WT210	T-08-SF125	YOKOGAWA	2018-03-26	2019-03-26
Stop Watch	PC396	T-08-SF086	Huibo	2018-03-17	2019-03-17
Digital Multimeter	15B	T-08-SF072	FLUKE	2018-03-17	2019-03-17
Electric load	3710A	T-08-SF077	ITEK POWER	2016-12-10	2019-03-17
Force Gauge	SN-300	T-08-SF115	Shandu	2017-07-13	2018-07-13
Drop test board	FZ-1218	F-08-SF025	N/A	N/A	N/A
Steel tape	HILOCK-19	T-08-SF100	TAJIMA	2013-04-18	2018-04-17
Electron Balance	HZ-ALC-20C+	T-08-SF035	hengzhan	2018-03-26	2019-03-26
Hi-pot Tester	CS2672C	T-08-SF081	changsheng	2018-03-26	2019-03-26
Digital real-time oscilloscope	TDS220	T-08-SF142	TEKTRONIX	2017-12-18	2018-12-18
Humidity	ESX-3CW	T-08-SF083	ESPEC	2017-12-17	2018-12-18
High Temperature Test Chamber	DP100	T-08-SF001	N/A	2017-08-28	2018-08-28
Ball pressure fixture	FZ-1104	T-08-SF034	HANYANG	2018-03-17	2019-03-17
Measuring network, touch current	GS-JCDLP4	T-08-SF222	GAOSHENG	2017-03-23	2019-03-23

END OF REPORT