



CE APPLICATION FOR LVD
On Behalf of
ALLNET GmbH

Prepared For :	ALLNET GmbH
	Maistrasse 2, 82110 Germering, Germany
Product Name:	WEB IP POWERSWITCH
Trademark :	ALLNET
Model :	ALL3073 ALL3075.
Prepared By :	Shenzhen BCTC Technology Co., Ltd.
	A. Floor 3, 44 Building, Tanglang Industrial Park B, Taoyuan Street, Nanshan District, Shenzhen, China
Test Date:	Oct. 23 - Oct. 29, 2012
Date of Report :	Oct. 29, 2012
Report No.:	BCTC-12100741S



TEST REPORT
EN60950-1:2006+A11:2009+A1:2010+A12:2011
Information technology equipment – Safety –
Part 1: General requirements

Report Reference No. **BCTC-12100741S**

Date of issue..... **Oct. 29, 2012**

Testing Laboratory..... **Shenzhen BCTC Technology Co., Ltd.**

Address..... A. Floor 3, 44 Building, Tanglang Industrial Park B, Taoyuan Street,
Nanshan District, Shenzhen, China

Applicant's name **ALLNET GmbH**

Address..... Maistrasse 2, 82110 Germering, Germany

Test specification:

Standard EN60950-1:2006+A11:2009+A1:2010+A12:2011

Test procedure LVD

Non-standard test method..... N/A

Test Report Form No..... IECEN60950_1C

Test Report Form(s) Originator .. SGS Fimko Ltd

Master TRF Dated 2007-06

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Name and address of the testing laboratory : Shenzhen BCTC Technology Co., Ltd.

A.Floor 3, 44 Building, Tanglang Industrial Park B,
Taoyuan Street, Nanshan District, Shenzhen, China

Date of Test:

Oct. 23 - Oct. 29, 2012

Prepared by(Engineer) :

Sanji Guan

Reviewer(Quality Manager) :

Sophie Lee

Approved&Authorized
Signer(Manager) :

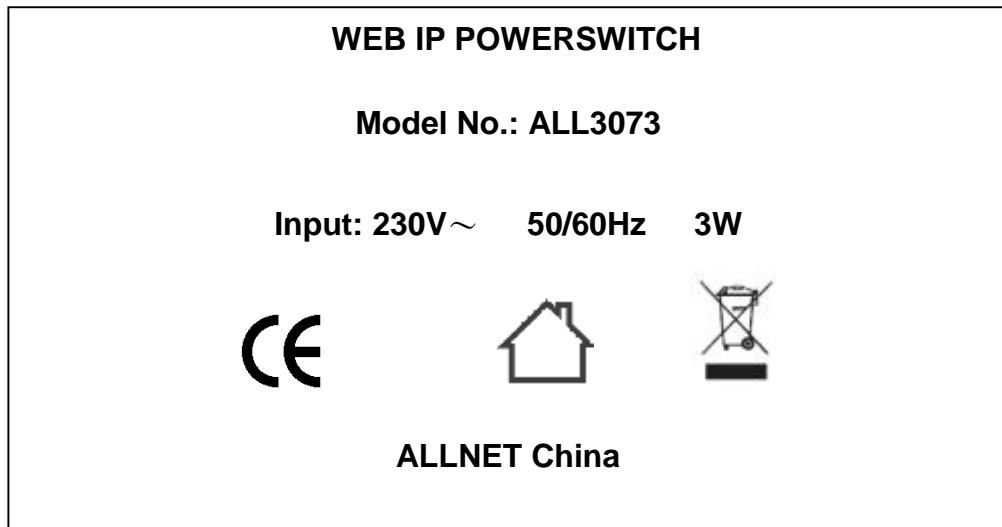
Casey Wang





Test item description.....: **WEB IP POWERSWITCH**
Trade Mark: **ALLNET**
Manufacturer: **ALLNET China**
D-Block 22K (22nd Floor) Huaqiang Square,Futian, Shenzhen,
518031 Guangdong, Peoples Republic of CHINA.
Model/Type reference.....: **ALL3073**
Ratings.....: **See the following marking plate**

Artwork of marking plate(representation):



Summary of testing:

The sample(s) tested complies with the requirements of EN60950-1:2006+A11:2009+A1:2010+A12:2011.



Test item particulars	
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input checked="" 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"/> permanent connection <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 (%) or absolute mains supply values	+10%, -10%
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Mass of equipment (kg)	Approx. 0.224Kg
Possible test case verdicts:	
- test case does not apply to the test object..... N (N/A)	
- test object does meet the requirement..... P (Pass)	
- test object does not meet the requirement..... F (Fail)	
Testing	
Date of receipt of test item.....	2012-10-23
Date(s) of performance of tests.....	2012-10-23 to 2012-10-29

**General remarks:**

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

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”(See Enclosure #)” refers to additional information appended to the report.

”(See appended table)” refers to a table appended to the report.

When determining for test conclusion, measurement uncertainty of tests has been considered.

The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

The test sample(s) was(were) provided by client.

The clause which indicated with * is the subcontract test item. (if there is subcontracting test)

Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.

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

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General product information:

WEB IP POWERSWITCH



EN 60950			
Clause	Requirement	Remark	Result
1	GENERAL		
1.5	Components		
1.5.1	General	Complies	P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	All safety critical components are certified. All components are used within their specified ratings, plastic materials, PCBs and wiring materials are UL listed, non-certified components were tested according to this standard.	P
1.5.3	Thermal controls	No thermal controls.	N
1.5.4	Transformers	Transformer used are suitable for their intended applications and comply with relevant parts of this standard and particularly Annex C, see Annex C – Transformers	P
1.5.5	Interconnecting cables		N
1.5.6	Capacitors bridging insulation		P
1.5.7	Resistors bridging insulation	Refer below	-
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No resistors bridging double or reinforced insulation between a.c mains and other circuits.	N



EN 60950			
Clause	Requirement	Remark	Result
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No resistors bridging double or reinforced insulation between a.c mains and antenna or coaxial cable.	N
1.5.8	Components in equipment for IT power systems		N
1.5.9	Surge suppressors		—
1.5.9.1	General		—
1.5.9.2	Protection of VDRs		—
1.5.9.3	Bridging of functional insulation by a VDR		N
1.5.9.4	Bridging of basic insulation by a VDR		N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N
1.6	Power interface		
1.6.1	AC power distribution systems	TN – power distribution system, IT for Norway	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	N
1.6.4	Neutral conductor		P
1.7	Marking and instructions		
1.7.1	Power rating	Complies	P
	Rated voltage(s) or voltage range(s) (V)	See the marking label	P
	Symbol for nature of supply, for d.c. only	See the marking label	N
	Rated frequency or rated frequency range (Hz) ...	See the marking label	P
	Rated current (mA or A)	See the marking label	P
	Manufacturer's name or trade-mark or identification mark	See the marking label	P



EN 60950			
Clause	Requirement	Remark	Result
	Model identification or type reference	Refer to cover page of test report	P
	Symbol for Class II equipment only		N
	Other markings and symbols	The additional marking does not give rise to misunderstandings.	P
1.7.2	Safety instructions and marking		P
1.7.2.1	General		—
1.7.2.2	Disconnect devices	The equipment is provided with a plug.	P
1.7.2.3	Overcurrent protective device		P
1.7.2.4	IT power distribution systems		—
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	P
1.7.2.6	Ozone	The equipment does not produce Ozone.	N
1.7.3	Short duty cycles	The equipment is intended for 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		P
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Fuse locations and markings: F1 T2A 250V	P
1.7.7	Wiring terminals	Refer below:	N
1.7.7.1	Protective earthing and bonding terminals		N



EN 60950			
Clause	Requirement	Remark	Result
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment is not permanently connected or provided with a non detachable power supply cord.	N
1.7.7.3	Terminals for d.c. mains supply conductors	The equipment is not supplied from d.c mains.	N
1.7.8	Controls and indicators	Refer below	—
1.7.8.1	Identification, location and marking		P
1.7.8.2	Colours		P
1.7.8.3	Symbols according to IEC 60417		P
1.7.8.4	Markings using figures		P
1.7.9	Isolation of multiple power sources	Only one connection supplying hazardous voltages and energy levels to the equipment.	N
1.7.10	Thermostats and other regulating devices	No thermostats or other regulating devices.	N
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No such removable parts	N
1.7.13	Replaceable batteries	No replaceable batteries in the equipment.	N
	Language(s)		—
1.7.14	Equipment for restricted access locations	Not for installation in restricted access locations	N

2	PROTECTION FROM HAZARDS		
2.1	Protection from electric shock and energy hazards		
2.1.1.1	Access to energized parts		P
	Test by inspection		P



EN 60950			
Clause	Requirement	Remark	Result
	Test with test finger (Figure 2A)		P
	Test with test pin (Figure 2B)		P
	Test with test probe (Figure 2C)	No TNV circuit.	N
2.1.1.2	Battery compartments	No TNV circuits in the equipment.	N
2.1.1.3	Access to ELV wiring	No internal wiring at ELV accessible to the operator.	N
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		P
2.1.1.5	Energy hazards	No energy hazard in operator access area. Checked by means of the test finger.	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage or TNV.	N
2.1.1.7	Discharge of capacitors in equipment	The capacitance of the input circuit is > 0.1Mf. The measurements were performed in worst case condition with regard to the fuse.	P
	Measured voltage (V); time-constant (s).....	V _{peak} =384V , V _{peak} *37%=142V The time constant is 22ms. Measured condition: fuse in After 1s, 16V X-cap. 1 =2= max. 0.1Uf	—
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to DC mains supply.	N
	a) Capacitor connected to the d.c. mains supply ..		N



EN 60950			
Clause	Requirement	Remark	Result
	b) Internal battery connected to the d.c. mains supply		N
2.1.1.9	Audio amplifiers	No audio amplifier.	N
2.1.2	Protection in service access areas		P
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	N
2.2	SELV circuits		
2.2.1	General requirements	SELV limits are not exceeded under normal condition and after a single fault.	P
2.2.2	Voltages under normal conditions (V)	Within SELV limits.	P
2.2.3	Voltages under fault conditions (V)	Within SELV limits.	P
2.2.4	Connection of SELV circuits to other circuits	SELV circuits are only connected to other SELV Circuits.	P
2.3	TNV circuits		
2.3.1	Limits		N
	Type of TNV circuits.....		—
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N



EN 60950			
Clause	Requirement	Remark	Result
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N
2.4	Limited current circuits		
2.4.1	General requirements		N
2.4.2	Limit values		—
	Frequency (Hz)		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured circuit capacitance (nF or μ F)		—
2.4.3	Connection of limited current circuits to other circuits		N
2.5	Limited power sources		
	a) Inherently limited output		N
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition		N
	d) Overcurrent protective device limited output		N
	Max. Output voltage (V), max. Output current (A), max. Apparent power (VA)		—
	Current rating of overcurrent protective device (A) .:		—
2.6	Provisions for earthing and bonding		
2.6.1	Protective earthing		P
2.6.2	Functional earthing		P
2.6.3	Protective earthing and protective bonding conductors		—
2.6.3.1	General		—



EN 60950			
Clause	Requirement	Remark	Result
2.6.3.2	Size of protective earthing conductors		—
	Rated current (A), cross-sectional area (mm ²), AWG :		—
2.6.3.3	Size of protective bonding conductors		—
	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)..... :	14.1mΩ, 32A test current, 2min.	N
2.6.3.5	Colour of insulation :		P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals		P
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N
2.6.5	Integrity of protective earthing	No other equipment connected to the LAN switch which is in the scope of this clause	P
2.6.5.1	Interconnection of equipment	SELV connections only	P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or overcurrent protection in PE or bonding conductors provided	P
2.6.5.3	Disconnection of protective earth	Inspected	P
2.6.5.4	Parts that can be removed by an operator	None	N



EN 60950			
Clause	Requirement	Remark	Result
2.6.5.5	Parts removed during servicing	No protective earth connection needs to be removed for servicing	N
2.6.5.6	Corrosion resistance	Annex J of standard considered	P
2.6.5.7	Screws for protective bonding		P
2.6.5.8	Reliance on telecommunication network or cable distribution system	No TNV	N

2.7	Overcurrent and earth fault protection in primary circuits		
2.7.1	Basic requirements		N
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7		—
2.7.3	Short-circuit backup protection		N
2.7.4	Number and location of protective devices		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel		N

2.8	Safety interlocks		
2.8.1	General principles		N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches and relays		N
2.8.7.1	Contact gaps (mm)		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N



EN 60950			
Clause	Requirement	Remark	Result
2.8.7.4	Electric strength test		N
2.8.8	Mechanical actuators		N

2.9	Electrical insulation		
2.9.1	Properties of insulating materials	No natural rubber, hygroscopic materials and materials containing asbestos used as insulation, approved power supplies used	P
2.9.2	Humidity conditioning	Humidity treatment performed for 120 hrs.	P
	Relative humidity (%), temperature (°C)	93%, 25°C	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, supplementary, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages	See below	P
	Method(s) used		—

2.10	Clearances, creepage distances and distances through insulation		
2.10.1	General		P
2.10.1.1	Frequency		—
2.10.1.2	Pollution degrees		P
2.10.1.3	Reduced values for functional insulation		P
2.10.1.4	Intervening unconnected conductive parts		—
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	The circuit will not generate starting pulse.	N



EN 60950			
Clause	Requirement	Remark	Result
2.10.2	Determination of working voltage	(see appended table 2.10.3 and 2.10.4)	—
2.10.2.1	General	See below	—
2.10.2.2	RMS working voltage	(see appended table 2.10.3 and 2.10.4)	N
2.10.2.3	Peak working voltage	(see appended table 2.10.3 and 2.10.4)	N
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General		—
2.10.3.2	Mains transient voltages		—
	a) AC mains supply		N
	b) Earthed d.c. mains supplies		N
	c) Unearthed d.c. mains supplies		N
	d) Battery operation		N
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	The circuit will not generate starting pulse.	N
2.10.3.6	Transients from a.c. mains supply	Considered.	—
2.10.3.7	Transients from d.c. mains supply	Not connected to d.c mains supply.	N
2.10.3.8	Transients from telecommunication networks and cable distribution systems	Not connected to telecommunication networks and cable distribution systems.	N
2.10.3.9	Measurement of transient voltage levels		—
	a) Transients from a mains supply	Measurement not relevant.	N
	For an a.c. mains supply		N



EN 60950			
Clause	Requirement	Remark	Result
	For a d.c. mains supply		N
	b) Transients from a telecommunication network :	Not connected to telecommunication networks.	N
2.10.4	Creepage distances	See below.	—
2.10.4.1	General	Considered.	—
2.10.4.2	Material group and comparative tracking index	See below.	—
	CTI tests..... :	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances		N
2.10.5	Solid insulation	See below	P
2.10.5.1	General		P
2.10.5.2	Distances through insulation		P
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		P
2.10.5.5.	Cemented joints		N
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material		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	No such thin sheet insulation used.	N
	Electric strength test		—
2.10.5.11	Insulation in wound components	Not used insulation in wound components.	N
2.10.5.12	Wire in wound components		N
	Working voltage		N



EN 60950			
Clause	Requirement	Remark	Result
	a) Basic insulation not under stress		N
	b) Basic, supplementary, reinforced insulation		N
	c) Compliance with Annex U		N
	Two wires in contact inside wound component; angle between 45° and 90°		N
2.10.5.13	Wire with solvent-based enamel in wound components	No wire with solvent-based enamel in wound components.	N
	Electric strength test		—
	Routine test		N
2.10.5.14	Additional insulation in wound components	No additional insulation used	N
	Working voltage		N
	- Basic insulation not under stress		N
	- Supplementary, reinforced insulation		N
2.10.6	Construction of printed boards		N
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	No special coating in order to reduce distances.	N
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	Coatings not used over terminations to increase effective creepage and clearance distances.	N



EN 60950			
Clause	Requirement	Remark	Result
2.10.8	Tests on coated printed boards and coated components	No special coating in order to reduce distance.	N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test		N
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound		P
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		P

3	WIRING, CONNECTIONS AND SUPPLY		
3.1	General		
3.1.1	Current rating and overcurrent protection		P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors		P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N
3.1.6	Screws for electrical contact pressure	No screw for electrical contact.	N
3.1.7	Insulating materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N
3.1.9	Termination of conductors		P
	10 N pull test		P
3.1.10	Sleeving on wiring		N



EN 60950			
Clause	Requirement	Remark	Result
3.2	Connection to a mains supply		
3.2.1	Means of connection	Refer below:	
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply	The equipment is not for connection to a d.c. mains supply.	N
3.2.2	Multiple supply connections	Only one supply connection.	N
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	N
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets		N
3.2.5	Power supply cords		—
3.2.5.1	AC power supply cords		N
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords	The equipment is not for connecting to d.c. mains.	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		P
3.2.8	Cord guards	Not used	N
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space	Equipment provided with an appliance inlet.	N



EN 60950			
Clause	Requirement	Remark	Result

3.3	Wiring terminals for connection of external conductors		
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N

3.4	Disconnection from the mains supply		
3.4.1	General requirement		P
3.4.2	Disconnect devices	Plug used as disconnect device	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N
3.4.4	Parts which remain energized	No parts remain energized after the disconnect device.	N
3.4.5	Switches in flexible cords	No isolating switch in the cord set.	N
3.4.6	Number of poles – single-phase and d.c. equipment		P
3.4.7	Number of poles – three-phase equipment	Single phase equipment.	N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		P
3.4.10	Interconnected equipment		P



EN 60950			
Clause	Requirement	Remark	Result
3.4.11	Multiple power sources		N
3.5	Interconnection of equipment		
3.5.1	General requirements	Considered	—
3.5.2	Types of interconnection circuits		P
3.5.3	ELV circuits as interconnection circuits		P
3.5.4	Data ports for additional equipment		P
4	PHYSICAL REQUIREMENTS		
4.1	Stability		
	Angle of 10°	Mass < 7kg	N
	Test force (N)	The unit is not floor-standing.	N
4.2	Mechanical strength		
4.2.1	General	Complies with the requirement also after tests described below are applied.	P
4.2.2	Steady force test, 10 N	No hazard.	P
4.2.3	Steady force test, 30 N	No internal enclosure.	N
4.2.4	Steady force test, 250 N	No hazard. Enclosure withstands 250N	P
4.2.5	Impact test	Refer below	-
	Fall test	No hazard	P
	Swing test	No hazard	P
4.2.6	Drop test; height (mm)	No hazard as result from the drop test at 1000mm height.	P



EN 60950			
Clause	Requirement	Remark	Result
4.2.7	Stress relief test	Test is carried out at 70°C / 7hrs. No risk of shrinkage or distortion on enclosures due to release of internal stresses.	P
4.2.8	Cathode ray tubes	None provided	N
	Picture tube separately certified		N
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N
4.2.10	Wall or ceiling mounted equipment; force (N)	Not intended to be mounted on a wall or ceiling.	N

4.3	Design and construction		
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N)	No knobs, grips, handles, lever etc.	N
4.3.3	Adjustable controls	No hazardous adjustable controls.	N
4.3.4	Securing of parts		P
4.3.5	Connection by plugs and sockets		P
4.3.6	Direct plug-in equipment	0.11Nm	P
	Torque		—
	Compliance with the relevant mains plug standard		P
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N
4.3.8	Batteries		N
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N



EN 60950			
Clause	Requirement	Remark	Result
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N
4.3.10	Dust, powders, liquids and gases	The equipment does not generate ionizing radiation or use a laser, and does not contain flammable liquids or gases.	N
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N
4.3.12	Flammable liquids	The equipment does not contain flammable liquid.	N
	Quantity of liquid (l)		N
	Flash point (°C)		N
4.3.13	Radiation	Refer below:	N
4.3.13.1	General	Refer below:	N
4.3.13.2	Ionizing radiation	The equipment does not generate 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	The equipment does not produce significant UV radiation.	N
	Part, property, retention after test, flammability classification		N



EN 60950			
Clause	Requirement	Remark	Result

4.3.13.4	Human exposure to ultraviolet (UV) radiation	The equipment does not produce significant UV radiation.	N
4.3.13.5	Laser (including LEDs)		P
	Laser class		—
4.3.13.6	Other types	The equipment does not generate other types of radiation.	N

4.4	Protection against hazardous moving parts		
4.4.1	General	No moving parts.	N
4.4.2	Protection in operator access areas	No moving parts.	N
4.4.3	Protection in restricted access locations	Not evaluated for restricted access locations	N
4.4.4	Protection in service access areas	Unintentional contact is not likely in service access areas.	N

4.5	Thermal requirements		
4.5.1	General	Complies with test, see appended table 4.5	P
4.5.2	Temperature tests		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		P

4.6	Openings in enclosures		
4.6.1	Top and side openings		P
	Dimensions (mm)		—



EN 60950			
Clause	Requirement	Remark	Result
4.6.2	Bottoms of fire enclosures	Fire enclosure construction is considered to comply with the requirements. No bottom openings.	N
	Construction of the bottom, dimensions (mm) . :		—
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment	No openings in the equipment.	N
4.6.4.1	Constructional design measures	No openings in the equipment.	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	No adhesives for constructional purposes used	N
	Conditioning temperature (°C), time (weeks) :		—

4.7	Resistance to fire		
4.7.1	Reducing the risk of ignition and spread of flame	No excessive temperatures, no easily burning materials employed	P
	Method 1, selection and application of components wiring and materials		P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all part, except decorative parts.	P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P



EN 60950			
Clause	Requirement	Remark	Result
4.7.3.1	General	Components and materials have adequate flammability classification.	P
4.7.3.2	Materials for fire enclosures	The fire enclosure is min. V-1 material.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	No parts outside the fire enclosure.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		
5.1	Touch current and protective conductor current		
5.1.1	General		P
5.1.2	Configuration of equipment under test (EUT)	See below.	—
5.1.2.1	Single connection to an a.c. mains supply		N
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power sources.	N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power sources.	N
5.1.3	Test circuit	Tested for connection to IT power distribution system	P
5.1.4	Application of measuring instrument	Measuring instrument D1 is used.	P
5.1.5	Test procedure	Considered.	—
5.1.6	Test measurements	Considered.	—
	Supply voltage (V)	253V	—
	Measured touch current (mA)	1.2mA	—



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Clause	Requirement	Remark	Result
	Max. Allowed touch current (mA) :	3.5mA	—
	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	Not connected to a telecommunication network nor a cable distribution system.	N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	Not connected to a telecommunication network.	N
	Supply voltage (V) :		—
	Measured touch current (mA) :		—
	Max. Allowed touch current (mA) :		—
5.1.8.2	Summation of touch currents from telecommunication networks	Not connected to a telecommunication network.	N
	a) EUT with earthed telecommunication ports :		N
	b) EUT whose telecommunication ports have no reference to protective earth		N

5.2	Electric strength		
5.2.1	General		P
5.2.2	Test procedure		P
5.3	Abnormal operating and fault conditions		
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	There is no motor in the equipment.	N



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Clause	Requirement	Remark	Result
5.3.3	Transformers	See appended Annex C.	P
5.3.4	Functional insulation	Complies with a) and c).	P
5.3.5	Electromechanical components	No electromechanical components	P
5.3.6	Audio amplifiers in ITE	No audio amplifier in equipment.	N
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs.	P
5.3.9	Compliance criteria for abnormal operating and fault conditions	See below.	P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P
5.3.9.2	After the tests		P

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

6.2	Protection of equipment users from overvoltages on telecommunication networks		
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N



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Clause	Requirement	Remark	Result
6.2.2.2	Steady-state test		N
6.2.2.3	Compliance criteria		N
6.3	Protection of the telecommunication wiring system from overheating		
	Max. Output current (A)		—
	Current limiting method		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		
7.1	General		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
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



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Clause	Requirement	Remark	Result
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	Remark	Result
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



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Clause	Requirement	Remark	Result
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 :	Primary to Secondary	—
	Manufacturer :	(see appended table 1.5.1)	—
	Type :	(see appended table 1.5.1)	—
	Rated values :	(see appended table 1.5.1)	—
	Method of protection :	Inherent protection	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended table 5.2)	P
	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)		P
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
G.1	Clearances		N
G.1.1	General		N



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Clause	Requirement	Remark	Result
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
	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



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Clause	Requirement	Remark	Result
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)		N
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		N

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringling 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



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Clause	Requirement	Remark	Result
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) :		N
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N
	a) Preferred climatic categories :		N
	b) Maximum continuous voltage :		N
	c) Pulse current :		N
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N
R.2	Reduced clearances (see 2.10.3)		N
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N



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



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Clause	Requirement	Remark	Result
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—

EN 60950-1:2006 – CENELEC COMMON MODIFICATIONS				
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations			P
General	Delete all the “country” notes in the reference document according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6. 2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2			—



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Clause	Requirement	Remark	Result
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:</p> <p>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



EN 60950															
Clause	Requirement	Remark	Result												
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>		P												
2.7.2	This subclause has been declared 'void'.		P												
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N												
3.2.5.1	<p>Replace "60245 IEC 53" by "H05 RR-F";</p> <p>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F";</p> <p>"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="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"> Up to and including 6</td> <td style="width: 33%;"> </td> <td style="width: 33%;">0,75^{a)}</td> <td style="width: 33%;"> </td> </tr> <tr> <td> Over 6 up to and including 10</td> <td> (0,75)^{b)}</td> <td>1,0</td> <td> </td> </tr> <tr> <td> Over 10 up to and including 16</td> <td> (1,0)^{c)}</td> <td>1,5</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			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													



EN 60950			
Clause	Requirement	Remark	Result
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A.		N
4.3.13.6	Add the following NOTE: NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		—
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N
Biblio-graphy	Additional EN standards.		—
ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS		—
ZB	SPECIAL NATIONAL CONDITIONS		P
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N
1.5.7.1	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2.		N
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		P
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N



EN 60950			
Clause	Requirement	Remark	Result
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojamaadoituskoskettimilla 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	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p>		N
2.2.4	<p>In Norway, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.</p>		N
2.3.2	<p>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.</p>		N
2.3.4	<p>In Norway, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.</p>		N
2.6.3.3	<p>In the United Kingdom, the current rating of the circuit shall be taken as 13 A, not 16 A.</p>		P
2.7.1	<p>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.</p>		N
2.10.5.13	<p>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.</p>		N



EN 60950																											
Clause	Requirement	Remark	Result																								
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> <table border="0"> <tr> <td>SEV 6532-2.1991</td> <td>Plug Type 15</td> <td>3P+N+PE</td> <td>250/400 V, 10 A</td> </tr> <tr> <td>SEV 6533-2.1991</td> <td>Plug Type 11</td> <td>L+N</td> <td>250 V, 10 A</td> </tr> <tr> <td>SEV 6534-2.1991</td> <td>Plug Type 12</td> <td>L+N+PE</td> <td>250 V, 10 A</td> </tr> </table> <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> <table border="0"> <tr> <td>SEV 5932-2.1998</td> <td>Plug Type 25</td> <td>3L+N+PE</td> <td>230/400 V, 16 A</td> </tr> <tr> <td>SEV 5933-2.1998</td> <td>Plug Type 21</td> <td>L+N</td> <td>250 V, 16 A</td> </tr> <tr> <td>SEV 5934-2.1998</td> <td>Plug Type 23</td> <td>L+N+PE</td> <td>250 V, 16 A</td> </tr> </table>	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	SEV 5932-2.1998	Plug Type 25	3L+N+PE	230/400 V, 16 A	SEV 5933-2.1998	Plug Type 21	L+N	250 V, 16 A	SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A		N
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SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A																								
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N																								
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																								



EN 60950			
Clause	Requirement	Remark	Result
3.2.1.1	In the United Kingdom , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N
3.2.1.1	In Ireland , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N
3.2.4	In Switzerland , for requirements see 3.2.1.1 of this annex.		P
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			
Clause	Requirement	Remark	Result
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





EN 60950			
Clause	Requirement	Remark	Result
6.1.2.1	<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>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</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 a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400:1994, 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 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400. 		N



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

ZC	A-DEVIATIONS (informative)		—
1.5.1	Sweden (Ordinance 1990:944) Add the following: NOTE In Sweden, switches containing mercury are not permitted.		P
1.5.1	Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.		P



EN 60950			
Clause	Requirement	Remark	Result
1.7.2.1	<p>Denmark (Heavy Current Regulations)</p> <p>Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text:</p> <p style="text-align: center;">Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket</p> <p style="text-align: center;"> eller </p> <p>If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text:</p> <p>“For tilslutning af de øvrige ledere, se medfølgende installationsvejledning.”</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
1.7.5	<p>Denmark (Heavy Current Regulations)</p> <p>With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.</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
5.1.7.1	<p>Denmark (Heavy Current Regulations, Chapter 707, clause 707.4)</p> <p>TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.</p>		N



1.5.1	TABLE: List of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Value/rating	Standard	Mark(s) of conformity ¹⁾	
Fuse F1	Chi Lick Schurter Limited	SPT3.6X10m m	T2.0A, 250Vac	IEC60127	VDE40015228	
Primary lead wire	Shenzhen Leiji Electronics Co Ltd	1007	300V 80°C VM-1	UL 758	UL E210567	
Photo-Coupler(P421)	Everlight Electronics CO Ltd	EL817	Isolation minimum 5000Vac	IEC60950-1	VDE 132249	
PCB	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-95(G)F	V-0, 130 °C	UL796	UL E141940	
Cap .x(x2)	Shenzhen xinguangdian Electronics Co Ltd	MKP62 X2	104M/275Vac	IEC60384-14/19 93	VDE:40014905 UL:E254330	
Relay	Shenzhen Chengjiajuen Electronics Co., Ltd	12VDC 8A/250VAC	130°C	IEC60950-1	Tested in appliance	
Enclosure	SABIC INNOVATIVE PLASTICS CHINA CO LTD	SE1X	V-0 105°C	UL94	UL E161723	
Transformer (T3)	Shenzhen HaixinxingElectro nics Co., Ltd	750871111 WE-MIDCOM NK1047	Class B	IEC60950-1	Tested in appliance	
¹⁾ An asterisk indicates a mark which assures the agreed level of surveillance						
Supplementary information:						



1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V/Hz)	I (A)	I rated (A)	P (W)	Fuse #	I fuse (A)	Condition/status	
207/50	0.034	--	3.10	F1	0.034	Normal load	
207/60	0.034	--	3.09	F1	0.034	Normal load	
230/50	0.033	--	3.26	F1	0.033	Normal load	
230/60	0.033	--	3.26	F1	0.033	Normal load	
253/50	0.033	--	3.45	F1	0.033	Normal load	
253/60	0.032	--	3.44	F1	0.032	Normal load	
Supplementary information:							

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)
L to N(after fuse)		325	230	1.5	5.3	2.5	5.3
P421 primary to secondary		354	228	4.0	6.9	5.0	6.9
T3 primary to secondary		472	258	4.2	9.9	5.2	9.9
Supplementary information:							

2.10.5	TABLE: Distance through insulation measurements					P
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Enclosure		--	230	3000	0.4	2.6
Supplementary information:						



4.5	TABLE: Thermal requirements						P
	Supply voltage (V)	207V	253V				—
		50Hz	50Hz				
	Ambient T _{min} (°C)	25.6	25.6				—
	Ambient T _{max} (°C)	25.4	25.6				—
Maximum measured temperature T of part/at::		T (°C)				Allowed T _{max} (°C)	
Plug holder		35.6	36.8			70	
Input wire		38.2	39.4			80	
L1 coil		65.3	67.4			130	
Capacitance X2 body		50.6	52.1			100	
Primary Capacitance body		53.2	54.1			105	
PCB near C16		67.7	69.6			130	
T3 coil		66.6	68.4			120	
T3 core		65.2	66.4			Ref	
P421 body		49.9	51.9			100	
PCB near C-S1		62.1	63.8			130	
Enclosure inside near T3		41.3	42.4			95	
Enclosure outside near T3		39.8	40.7			95	
Ambient		25.5	25.7			--	
Supplementary information:							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--							
Supplementary information:							



4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm)	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
T3 bobbin		125	1.1	
Supplementary information:				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
L to N(Fuse opened)		AC	1500	NO
L/N to enclosure(wrap with foil)		AC	1500	NO
L/N to output terminal		AC	3000	NO
T3 primary to secondary		AC	3000	NO
Supplementary information:				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25°C, if not specify.		—	
	Power source for EUT: Manufacturer, model/type, output rating		Refer to page 4		—	
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Primary capacitance	S-C	253	1S	F1	0	Fuse opened immediately, no hazards.
Opening	blocked	253	2.5h	F1	0.033	Unit shut down after 2.5h, no damage, no hazards.
T3 pin1-2	S-C	253	10min	F1	0.007	Unit shut down immediately, no damage, no hazards.
T3 pin6-7	S-C	253	10min	F1	0.005	Unit shut down immediately, no damage, no hazards.



P421 pin1-2	S-C	253	10min	F1	0.003	Unit shut down immediately, no damage, no hazards.
P421 pin3-4	S-C	253	10min	F1	0.005	Unit shut down immediately, no damage, no hazards.
P421 pin1	O-C	253	10min	F1	0.005	Unit shut down immediately, no damage, no hazards.
P421 pin3	O-C	253	10min	F1	0.003	Unit shut down immediately, no damage, no hazards.
Secondary capacitance	S-C	253	10min	F1	0.004	Unit shut down immediately, no damage, no hazards.
Supplementary information: S-C=short circuit, O-C=open circuit, O-L=over load.						



ANNEX A:
Photo-documentation

EUT Photo 1



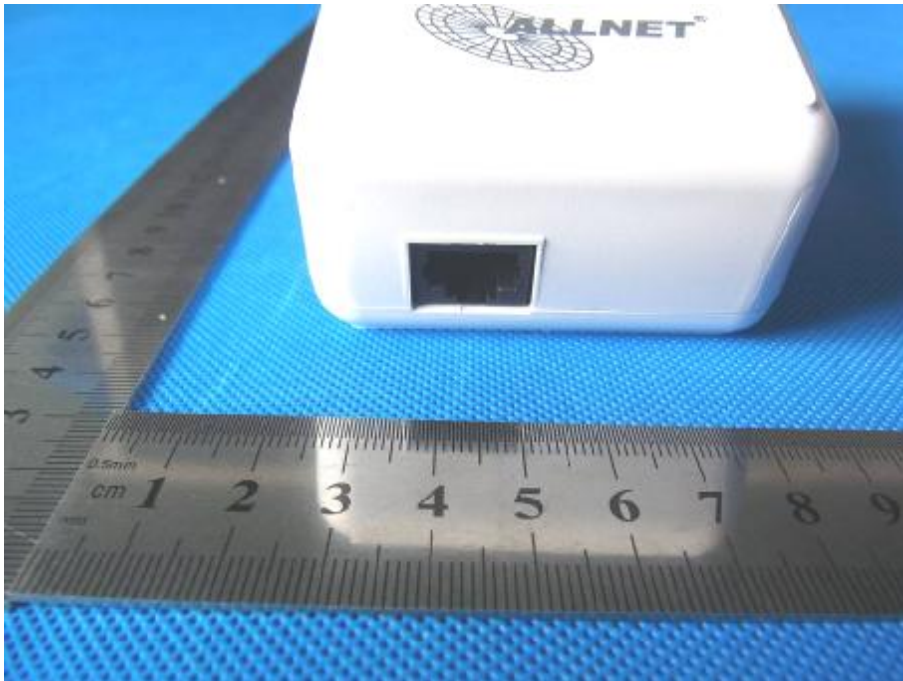
EUT Photo 2



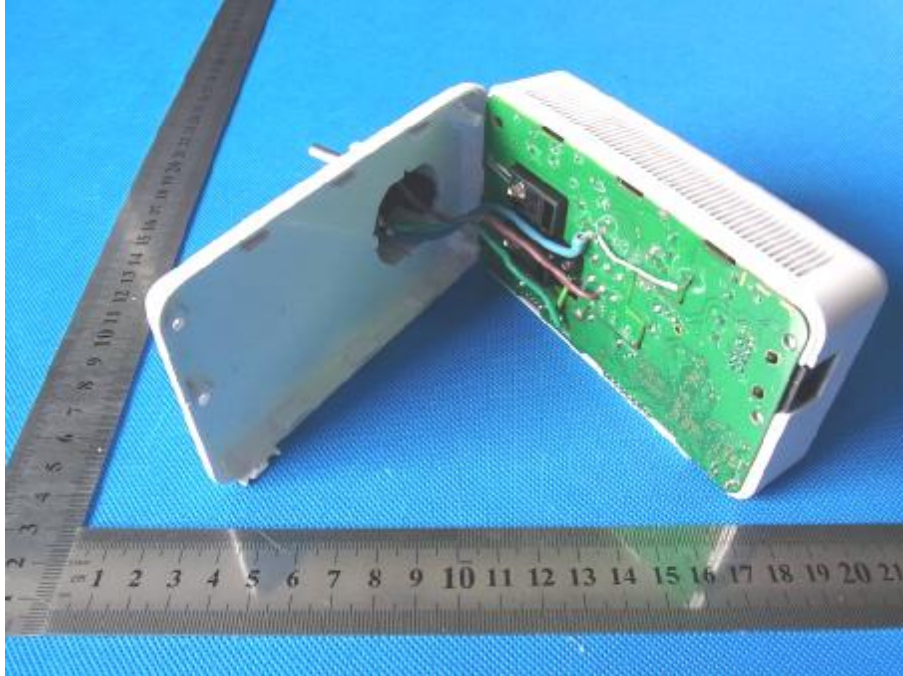
EUT Photo 3



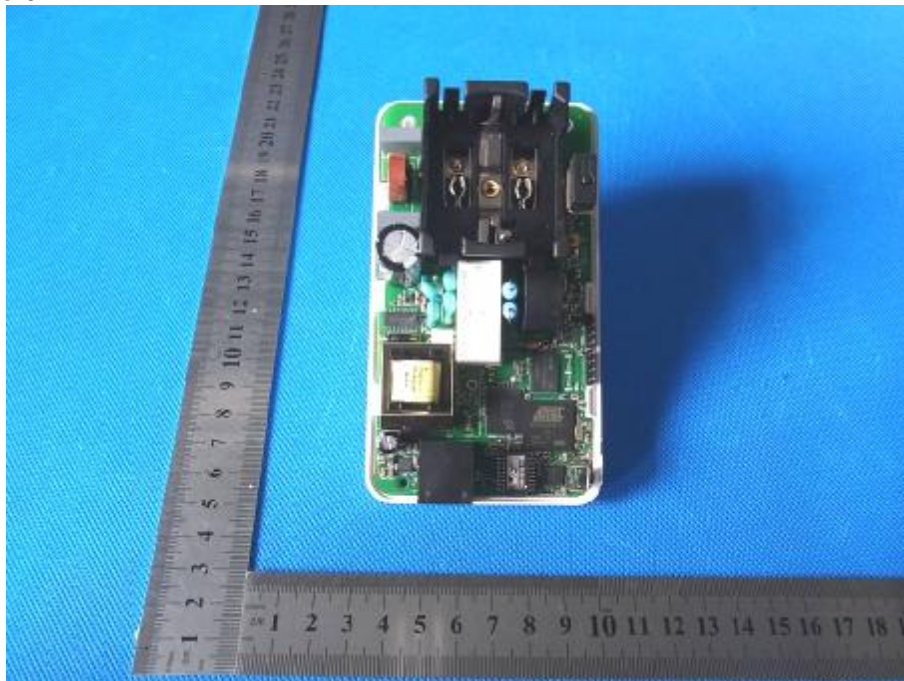
EUT Photo 4



EUT Photo 5



EUT Photo 6



***** END OF REPORT *****