

TEST REPORT

EN 60950-1

Information technology equipment – Safety – Part 1: General requirements

Report Number. : CTK-2017-02188

Date of issue : 2016-06-01

Total number of pages..... : 51 pages

Applicant's name..... : Hanwha Techwin Co., Ltd

Address : Hanwha Techwin R&D center, 6 Pangyo-ro 319Beon-gil,
Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA

Test specification:

Standard..... : EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013

Test procedure : CE (LVD)

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

Test Report Form No..... : IEC60950_1F

Test Report Form(s) Originator : SGS Fimko Ltd

Master TRF..... : Dated 2015-03

Modified Test Report Form No..... : CTK-RF-SC-IEC60950-1F

TRF modified by : CTK Co., Ltd.

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Test item description	DIGITAL COLOR CAMERA
Trade Mark	N/A
Manufacturer	HANWHA TECHWIN (TIANJIN) CO.,LTD.. No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China
Model/Type reference	SCB-5003PH, SCB-5000PH
Ratings	230 V~, 50 Hz, 0.1 A

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Testing procedure and testing location:			
☒	Testing Laboratory:	CTK Co., Ltd.	
Testing location/ address		(Ho-dong) 113, Yejik-ro, Cheoin-gu, Yongin-shi Gyeonggi-do KOREA, REPUBLIC OF	
☐	Associated Testing Laboratory:		
Testing location/ address		N/A	
Tested by (name, function, signature)		JungKyu Yang, Project handler	
Approved by (name, function, signature) ...:		KwangWon Lee, Project Reviewer	
☐	Testing procedure: TMP/CTF Stage 1:		
Testing location/ address		N/A	
Tested by (name, function, signature)		N/A	
Approved by (name, function, signature) ...:		N/A	
☐	Testing procedure: WMT/CTF Stage 2:		
Testing location/ address		N/A	
Tested by (name, function, signature)		N/A	
Witnessed by (name, function, signature) ..:		N/A	
Approved by (name, function, signature) ...:		N/A	
☐	Testing procedure: SMT/CTF Stage 3 or 4:		
Testing location/ address		N/A	
Tested by (name, function, signature)		N/A	
Witnessed by (name, function, signature) ..:		N/A	
Approved by (name, function, signature) ...:		N/A	
Supervised by (name, function, signature) :		N/A	

List of Attachments (including a total number of pages in each attachment): Attachment 1: 21 pages (European group differences (EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013)) Attachment 2: 7 pages (Photographs)

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Summary of testing:	
Tests performed (name of test and test clause): All clauses	Testing location: CTK Co., Ltd. (Ho-dong) 113, Yejik-ro, Cheoin-gu, Yongin-shi Gyeonggi-do KOREA, REPUBLIC OF
Summary of compliance with National Differences	
List of countries addressed: European group differences	
☒ The product fulfils the requirements of the standard EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013	

Copy of marking plate


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Test item particulars	
Equipment mobility	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in
Connection to the mains	☒ pluggable equipment ☒ type A ☐ type B ☐ permanent connection ☐ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition	☒ continuous ☐ rated operating / resting time:
Access location	☒ operator accessible ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other
Mains supply tolerance (%) or absolute mains supply values	N/A
Tested for IT power systems	☐ Yes ☒ No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating of protective device as part of the building installation (A)	N/A
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class	IP X0
Altitude during operation (m)	Up to 2 000 m
Altitude of test laboratory (m)	180 m
Mass of equipment (kg)	0.48
Possible test case verdicts:	
- test case does not apply to the test object: N/A	
- test object does meet the requirement.....: P (Pass)	
- test object does not meet the requirement: F (Fail)	
Testing	
Date of receipt of test item: 2016-05-02	
Date(s) of performance of tests	
2016-05-02 to 2016-05-29	
General remarks:	
"(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	

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Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:			
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☐ Yes		
	☒ Not applicable		
When differences exist; they shall be identified in the General product information section.			
Name and address of factory (ies) : 1. HANWHA TECHWIN (TIANJIN) CO.,LTD.. No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China			
General product information: - Model SCB-5003PH is a basic model and representatively tested. - Tma : 55 - Model SCB-5000PH is identical to model SCB-5003PH except for removed wide dynamic range function			
Abbreviations used in the report:			
- normal conditions - functional insulation - double insulation - between parts of opposite polarity	N.C. OP DI BOP	- single fault conditions - basic insulation - supplementary insulation - reinforced insulation	S.F.C BI SI RI
Indicate used abbreviations (if any)			

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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	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls	N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables	(see Annex C)	P
1.5.6	Capacitors bridging insulation	Used capacitor complied with IEC 60384-14	P
1.5.7	Resistors bridging insulation		P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Functional insulation (R2, R5, R7)	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No resistors bridging double or reinforced insulation	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No resistors bridging double or reinforced insulation.	N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors		P
1.5.9.1	General	Approved varistor comply with Annex Q (see appended table 1.5.1)	P
1.5.9.2	Protection of VDRs	A fuse having an adequate breaking capacity is connected in series with VDR	P

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Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.3	Bridging of functional insulation by a VDR	Approved varistor located between mains lines	P
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

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 a hand-held unit.	N/A
1.6.4	Neutral conductor		N/A

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	(see copy of marking plates)	P
1.7.1.1	Power rating marking	Power rating marking is located on the surface of the equipment.	P
	Multiple mains supply connections		N/A
	Rated voltage(s) or voltage range(s) (V)	230 V~	P
	Symbol for nature of supply, for d.c. only	AC Mains supply	N/A
	Rated frequency or rated frequency range (Hz)	50 Hz	P
	Rated current (mA or A)	0.1 A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark	(See copy of marking plates)	P
	Model identification or type reference	(See copy of marking plates)	P
	Symbol for Class II equipment only	Class I equipment	N/A
	Other markings and symbols	(see copy of marking plates)	P
1.7.1.3	Use of graphical symbols	Located on the user manual.	P
1.7.2	Safety instructions and marking		N/A
1.7.2.1	General		N/A
1.7.2.2	Disconnect devices		N/A
1.7.2.3	Overcurrent protective device	Pluggable equipment type A	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool	No operator access area with a tool	N/A
1.7.2.6	Ozone	The equipment under test does not produce ozone.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.3	Short duty cycles	Continuous operation	N/A
1.7.4	Supply voltage adjustment	No voltage adjustment	N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment	No power outlets on the equipment	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Marked on the PCB with silk-screen "F1: 250V,T5AL" "F2: 250V,T5AL"	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals	Protective earthing symbol (IEC 60417-5019) used.	P
1.7.7.2	Terminals for a.c. mains supply conductors	AC plug.	P
1.7.7.3	Terminals for d.c. mains supply conductors	AC mains supply	N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking		P
1.7.8.2	Colours		N/A
1.7.8.3	Symbols according to IEC 60417	No switches	N/A
1.7.8.4	Markings using figures	No Markings using figures	N/A
1.7.9	Isolation of multiple power sources	No multiple power sources	N/A
1.7.10	Thermostats and other regulating devices	No thermostats and other regulating devices	N/A
1.7.11	Durability	Rubbing the marking by hand for 15s with a piece of cloth soaked with water and petroleum spirit. After this test, the marking is still legible.	P
1.7.12	Removable parts	No marking on removable parts.	P
1.7.13	Replaceable batteries	No replaceable batteries	N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations		N/A

2	PROTECTION FROM HAZARDS	P
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2.1	Protection from electric shock and energy hazards	P
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EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1	Protection in operator access areas	Operator access to hazardous parts is not generated hazardous voltage	P
2.1.1.1	Access to energized parts	See below	P
	Test by inspection	No openings	P
	Test with test finger (Figure 2A)	No openings	P
	Test with test pin (Figure 2B)	No openings	P
	Test with test probe (Figure 2C)	No TNV circuit	N/A
2.1.1.2	Battery compartments	No battery compartments	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	Not accessible to operator	N/A
2.1.1.5	Energy hazards		N/A
2.1.1.6	Manual controls	No manual controls	N/A
2.1.1.7	Discharge of capacitors in equipment	X-Capacitor (C8) : 0.1 µF	N/A
	Measured voltage (V); time-constant (s).....		—
2.1.1.8	Energy hazards – d.c. mains supply	AC Mains supply	N/A
	a) Capacitor connected to the d.c. mains supply ..		N/A
	b) Internal battery connected to the d.c. mains supply		N/A
2.1.1.9	Audio amplifiers	No audio amplifier	N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations	Equipment not intended for installation in restricted access locations.	N/A

2.2	SELV circuits		P
2.2.1	General requirements	(see appended table 2.2)	P
2.2.2	Voltages under normal conditions (V)	Between any SELV circuits 42.4 V _{peak} or 60 V _{dc} are not exceeded (see appended table 2.2)	P
2.2.3	Voltages under fault conditions (V)	Limits of 71 V _{peak} and 120 V _{dc} were not exceeded (See appended table 5.3)	P
2.2.4	Connection of SELV circuits to other circuits	SELV to SELV only	P

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EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuit	N/A
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions :		N/A
2.3.3	Separation from hazardous voltages	No hazardous voltage in the equipment.	N/A
	Insulation employed :		—
2.3.4	Connection of TNV circuits to other circuits	No connection of TNV circuits to other circuits	N/A
	Insulation employed :		—
2.3.5	Test for operating voltages generated externally		N/A

2.4	Limited current circuits		P
2.4.1	General requirements	Limits are not exceeded through C15 component.	P
2.4.2	Limit values	0.7 mA _{peak}	P
	Frequency (Hz)..... :	Annex D.1 used.(60 Hz)	—
	Measured current (mA)..... :	C15: 0.20 mA _{peak}	—
	Measured voltage (V)..... :	C15: 102.0 mV _{peak}	—
	Measured circuit capacitance (nF or µF) :	C15: 1 000 pF	—
2.4.3	Connection of limited current circuits to other circuits		P

2.5	Limited power sources		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		N/A
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
2.6.1	Protective earthing		P
2.6.2	Functional earthing		N/A
	Use of symbol for functional earthing		N/A
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		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
	Protective current rating (A), cross-sectional area (mm ²), AWG.....		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	0.011 Ω, 0.26 V, 32 A, 2 min.	P
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).....	16 A , 3.5 mm	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.8	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	Integral fuse(F1, F2) is provided as a protection for this requirements.	P
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7	Considered	P
2.7.3	Short-circuit backup protection	PLUGGABLE EQUIPMENT TYPE A, The building installation is considered as providing short-circuit backup protection.	P
2.7.4	Number and location of protective devices	One protective device (F1, F2) in the "LIVE" phase	P
2.7.5	Protection by several devices	One protective device is provided	N/A
2.7.6	Warning to service personnel	No protective device is provided in the neutral conductor	N/A

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

2.9	Electrical insulation	P
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2.9.1	Properties of insulating materials	Natural rubber, materials containing asbestos and hygroscopic materials are not used as insulation	P
2.9.2	Humidity conditioning	Humidity treatment performed for 48 h.	P
	Relative humidity (%), temperature (°C) :	93.0 %, 30.0 °C	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages	Electrical strength test conducted after the humidity treatment, heating, fault test. No flash over or breakdown of insulation	P
	Method(s) used :	Method 1	—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	Considered	P
2.10.1.1	Frequency :	For frequencies up to 30 kHz	P
2.10.1.2	Pollution degrees :	Pollution Degree 2	P
2.10.1.3	Reduced values for functional insulation	(see clause 5.3.4)	P
2.10.1.4	Intervening unconnected conductive parts		P
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements	No special separation requirements	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No circuit generating starting pulses.	N/A
2.10.2	Determination of working voltage	(see appended table 2.10.2)	P
2.10.2.1	General	Considered	P
2.10.2.2	RMS working voltage	(see appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(see appended table 2.10.2)	P
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages	Overvoltage Category II, Mains Transient Voltage 2500 Vpk	P
	a) AC mains supply :	Less than 300 Vrms	P
	b) Earthed d.c. mains supplies :	Not intended for d.c.	N/A
	c) Unearthed d.c. mains supplies :	Not intended for d.c.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	d) Battery operation	No battery in the equipment.	N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	Only the functional insulation in secondary circuits complied with Clause 5.3.4	P
2.10.3.5	Clearances in circuits having starting pulses	No circuitry generating starting pulses.	N/A
2.10.3.6	Transients from a.c. mains supply	Overvoltage Category II, Mains Transient Voltage 1500 Vpk	P
2.10.3.7	Transients from d.c. mains supply	Not connected to DC mains supply.	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems	Not connected to telecommunication networks and cable distribution systems.	N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply	.	N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network ..		N/A
2.10.4	Creepage distances	see appended table 2.10.3 and 2.10.4)	P
2.10.4.1	General	Considered	P
2.10.4.2	Material group and comparative tracking index	Material group II is assumed	—
	CTI tests		P
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5	Solid insulation		P
2.10.5.1	General	Considered	P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No such construction used	N/A
2.10.5.4	Semiconductor devices	Certified optical isolator used (see appended table 1.5.1)	P
2.10.5.5	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material	Polyester film tape: Min. 0.025 mm thickness	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of layers (pcs)..... :	Min. 2 layers	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		P
	Electric strength test	(see appended table 5.2)	—
2.10.5.11	Insulation in wound components	Insulation on winding wire and additional thin sheet material between the conductor of a wire and another conductive part	N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U		N/A
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		P
	Working voltage		P
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		P
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards		P
2.10.6.2	Coated printed boards	No special coating used	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)..... :		N/A
2.10.7	Component external terminations		P
2.10.8	Tests on coated printed boards and coated components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

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

3.2	Connection to a mains supply		P
3.2.1	Means of connection		N/A
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply	No connection to a d.c. mains supply	N/A
3.2.2	Multiple supply connections	No multiple supply connections	N/A
3.2.3	Permanently connected equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		P
3.2.5.1	AC power supply cords		P
	Type	H05VV-F	—
	Rated current (A), cross-sectional area (mm ²), AWG	16 A , 0.75 mm ²	—
3.2.5.2	DC power supply cords	No DC power supply cords are provided.	N/A
3.2.6	Cord anchorages and strain relief		P
	Mass of equipment (kg), pull (N)	0.48 Kg, 30 N	—
	Longitudinal displacement (mm)	0.1 mm	—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space		N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals	No screw terminals	N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		N/A
3.4.1	General requirement		N/A
3.4.2	Disconnect devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment	No three-phase equipment	N/A
3.4.8	Switches as disconnect devices	No switches as disconnect devices	N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits	SELV circuit or limited current circuits.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	N/A
3.5.4	Data ports for additional equipment		N/A

4	PHYSICAL REQUIREMENTS	P
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4.1	Stability		N/A
	Angle of 10°		N/A
	Test force (N)		N/A

4.2	Mechanical strength		P
4.2.1	General		N/A
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	No hazards	P
4.2.3	Steady force test, 30 N	No such cover and door	N/A
4.2.4	Steady force test, 250 N	No hazards	P
4.2.5	Impact test		P
	Fall test		P
	Swing test		N/A
4.2.6	Drop test; height (mm)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.7	Stress relief test	No indication of shrinkage or distortion on enclosures due to the stress relief test (86.1 °C / 7 h).	P
4.2.8	Cathode ray tubes	No cathode ray tube	N/A
	Picture tube separately certified		N/A
4.2.9	High pressure lamps	No high pressure lamps	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	50 N	P

4.3	Design and construction		P
4.3.1	Edges and corners	In equipment edge and corner is composed of rounded and smoothed	P
4.3.2	Handles and manual controls; force (N)	No handles and manual controls which might create a hazard	N/A
4.3.3	Adjustable controls	No adjustable controls	N/A
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	N/A
4.3.5	Connection by plugs and sockets		N/A
4.3.6	Direct plug-in equipment		N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries	No batteries in the equipment	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	No oil and grease	N/A
4.3.10	Dust, powders, liquids and gases	No dust, powders, liquids and gases	N/A
4.3.11	Containers for liquids or gases	No liquids or gases	N/A
4.3.12	Flammable liquids	No flammable liquids	N/A
	Quantity of liquid (l)		N/A
	Flash point (°C)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13	Radiation	No equipment using ionizing radiation	N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation	No equipment generate ionizing radiation	N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)		N/A
4.3.13.6	Other types		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L	L.7	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits		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		P
	Dimensions (mm)	No openings	—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottom, dimensions (mm) ...	No openings	—
4.6.3	Doors or covers in fire enclosures	No doors or covers in fire enclosure	N/A
4.6.4	Openings in transportable equipment	No transportable equipment	N/A
4.6.4.1	Constructional design measures	No openings	N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings	No openings	N/A
4.6.4.3	Use of metallized parts	No openings	N/A
4.6.5	Adhesives for constructional purposes	No barrier secured by adhesive inside enclosure	N/A
	Conditioning temperature (°C), time (weeks).....		—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Fire enclosure construction is considered to comply with the requirement	P
	Method 1, selection and application of components wiring and materials	(see appended table 5.3)	P
	Method 2, application of all of simulated fault condition tests		N/A
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 parts.	P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	General	Components and materials have adequate flammability classification. (see appended table 1.5.1)	P
4.7.3.2	Materials for fire enclosures	Fire enclosure material is V-0	P
4.7.3.3	Materials for components and other parts outside fire enclosures	No parts outside the fire enclosure.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	All materials are mounted on PCB rated Min. V-1	P
4.7.3.5	Materials for air filter assemblies	No air filter assemblies	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components	N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS	P
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5.1	Touch current and protective conductor current		P
5.1.1	General	(see appended table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.3	Test circuit	Using the test circuit in figure 5A	P
5.1.4	Application of measuring instrument	Annex D, Figure D.1	P
5.1.5	Test procedure	Test made to 10 x 20 cm metal foil in contact with accessible non-conductive part. Tested using D.1 measuring instrument	P
5.1.6	Test measurements	See below	P
	Supply voltage (V)	253 V~	—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA).....		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No telecommunication networks	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

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 motors	N/A
5.3.3	Transformers	(See Annex C and appended table C.2)	P
5.3.4	Functional insulation.....	Method a) or b) or c)	P
5.3.5	Electromechanical components	No electromechanical components	N/A
5.3.6	Audio amplifiers in ITE	No audio amplifier in the equipment.	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire and molten metal or deformation	P
5.3.9.2	After the tests	No reduction of clearance and creepage distances. Electric strength test is made on reinforced insulation.	P

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

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

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS	N/A
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7.1	General	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment	N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system	N/A
7.4	Insulation between primary circuits and cable distribution systems	N/A
7.4.1	General	N/A
7.4.2	Voltage surge test	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.4.3	Impulse test		N/A

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material		—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

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

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position	T1	—

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Clause	Requirement + Test	Result - Remark	Verdict
	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	The insulation fulfill the requirements in 2.10 and relevant tests of 5.2. (see appended table 5.2 and C.2)	P
	Protection from displacement of windings	Windings are twisted and soldered on pins.	P

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

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		P
G.1	Clearances		P
G.1.1	General		P
G.1.2	Summary of the procedure for determining minimum clearances		P
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		P
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		P

H	ANNEX H, IONIZING RADIATION (see 4.3.13)	N/A
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)	N/A
	Metal(s) used	—

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

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

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)	N/A
M.1	Introduction	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A

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

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

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

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

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power distribution systems		P

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

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

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

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Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		P
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AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
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BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
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CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		N/A
CC.1	General		N/A
CC.2	Test program 1		N/A
CC.3	Test program 2		N/A
CC.4	Test program 3.....		N/A
CC.5	Compliance.....		N/A

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

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

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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⁾	
- Description:						
AC Plug	Longwell	LP-33	250 V, 16 A	IEC 60320	VDE, FIMKO, SEMKO	
AC Cord	Longwell	H05VV-F	3 G 0.75 mm2	IEC 61242	VDE, FIMKO, SEMKO	
Connector (CON1)	Yeonho	YAW396-03AV	250V, 12 A	EN 60950-1	Tested in Equipment	
Cord Bushing	Lee Fong Plastic	LF-32	V-0, 50 °C	UL94	UL	
Fuse(F1, F2)	Orisel	OS5	250 V, T5AL	IEC 60127	VDE	
(Alternate)	Cooper Bussmann Inc.	SS-5	250 V, T5AL	IEC 60127	VDE	
Varistor (U1, U2, U3)	Joyin Company Ltd.	JVR 14N561K	560V,6KV(1.2/50 uS) 3000 Apk (8/20 us) (line to line). Located after the fuse	IEC61051-1 IEC 61051-2 IEC 61051-2-2, IEC 60065 Clause 14.12 and IEC 60950-1 Annex Q	VDE	
(Alternate)	Thinking electronics Co., Ltd.	TVR 14 561	560V,6KV(1.2/50 uS) 3000 Apk (8/20 us) (line to line). Located after the fuse	IEC61051-1 IEC 61051-2 IEC 61051-2-2, IEC 60065 Clause 14.12 and IEC 60950-1 Annex Q	VDE	
(Alternate)	AMOTECH CO LTD	INR 14D561	560V,6KV(1.2/50 uS) 3000 Apk (8/20 us) (line to line). Located after the fuse	IEC61051-1 IEC 61051-2 IEC 61051-2-2, IEC 60065 Clause 14.12 and IEC 60950-1 Annex Q	VDE	
Surge Absorber (AR1)	OKAYA ELECTRIC INDUSTRIES CO LTD	RA-452M-V7	4500V.(Internal Clearance 2.5mm, Creepage Distance, 2.5 mm)	IEC 60384-14	X-Capacitor (C8) PILKOR PCX2 337 AC 275 V, 0.1 uF IEC 60384-14 ENEC	
X-Capacitor (C8)	Sunil	436D	275 V, 0.1 uF	IEC 60384-14	ENEC	
(Alternate)	Pilkor	PCX2 337M	275 V, 0.1 uF	IEC 60384-14	ENEC	
(Alternate)	ZhuHai Sung Ho	CMPP	Min. 275 V,	IEC 60384-14	VDE	

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Clause	Requirement + Test			Result - Remark	Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	Electronics Co. Ltd.		Max. 10 uF, marked X2, 105 °C or 110 °C		
Y-Capacitor (C15)	Dong IL Electronics	DA	AC 400 V, 1000 pF, Y1	IEC 60384-14	ENEC, FIMKO
(Alternate)	Samwha Capacitor Co., Ltd.	SD	AC 400 V, 1000 pF, Y1	IEC 60384-14	VDE, ENEC
(Alternate)	Wendeng Netron Tech Co., Ltd.	AD	AC 400 V, 1000 pF, Y1	IEC 60384-14	VDE, ENEC
(Alternate)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Primary-to-Secondary, Rated Min. 250 Vac, Max. 1000 pF, Marked with Y1, 125 °C	EN 60384-14:2005	FIMKO
Line filter(L2)	DONG HEUNG ELECTRONICS CO., LTD.	UV18080	Min. 11 mH, 130 °C, V-0, Class B	EN 60950-1	Tested in Equipment
(Alternate)	SUN TECH CO., LTD.	UV18080	Min. 11 mH, 130 °C, V-0, Class B	EN 60950-1	Tested in Equipment
(Alternate)	WOOSUNG L&C CO.,	UV18080	Min. 11 mH, 130 °C, V-0, Class B	EN 60950-1	Tested in Equipment
Transformer (T1)	DONGHEUNGEL ETRONICSCO., LTD. / DH	SCB-3000PH	300 uH, 130 °C, V-0, Class B	EN 60950-1	Tested in Equipment
(Alternate)	DONGINSYSYSTEMCO.,LTD / DI	SCB-3000PH	300 uH, 130 °C, V-0, Class B	EN 60950-1	Tested in Equipment
(Alternate)	DAERYUNELECTRONICSCO.,LTD / DR	SCB-3000PH	300 uH, 130 °C, V-0, Class B	EN 60950-1	Tested in Equipment
(Alternate)	SUN TECH CO., LTD.	SCB-3000PH	300 uH, 130 °C, V-0, Class B	EN 60950-1	Tested in Equipment
Optical isolators (PC1, PC2)	Lite-on	LTV817	Int./Ext./Thick:5.2 / 7.8/0.8 5 00	IEC/EN 60950-1	FIMKO
(Alternate)	Renesas Electronics	PS25****_*(PS2561D)	Int./Ext./Thick:5.3 /8.0/>0.4 5 000 V isolation	IEC/EN 60950-1	FIMKO
Bridge diode (BR 1)	Interchangeable	Interchangeable	600 V, 1 A	EN 60950-1	Tested in Equipment

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Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
PWM IC (IC2)	FAIRCHILD	KA5M0365RN	Drain- Gate Voltage : 65 0 V, Continuous Drain Current : 0. 42 A	EN 60950-1	Tested in Equipment
Elec. Capacitor (C5)	Interchangeable	Interchangeable	400 V, 10 uF, 105 °C	EN 60950-1	Tested in Equipment
Discharge resistor (R2, R5, R7)	Interchangeable	Interchangeable	1 M ohm, 1/4 W	EN 60950-1	Tested in Equipment
Insulation sheet	Interchangeable	Interchangeable	Min. V-2, > 0.4 mm	EN 60950-1	Tested in Equipment
Insulation tube	Interchangeable	Interchangeable	Min. V-2, > 0.4 mm	EN 60950-1	Tested in Equipment
Adhesive (Silicon bond)	Okong Corp	H-828W1	V-0, 3.0 mm, 105 °C	UL94	UL
Enclosure (Front)	Interchangeable	Interchangeable	Metal, min. 2.5 mm thickness	EN 60950-1	Tested in Equipment
Enclosure (Body, Rear)	Samsung SDI	HN-10641	Min, 1.7 mm, V- 0, 130 °C	UL94	UL
PCB	Interchangeable	Interchangeable	FR-4, V-0, 1.6 mm	UL746	UL
supplementary information:					
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

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Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	TABLE: Opto Electronic Devices		P
Manufacturer : See table 1.5.1 Type : See table 1.5.1 Separately tested..... : Yes Bridging insulation : Reinforced insulation External creepage distance..... : See table 1.5.1 Internal creepage distance : See table 1.5.1 Distance through insulation : See table 1.5.1 Tested under the following conditions : N/A			
Input : N/A			
Output..... : N/A			
supplementary information			

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Clause	Requirement + Test				Result - Remark	Verdict
1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status
207	0.046		4.20	F1	0.046	Normal operating
230	0.043		4.30	F1	0.043	Normal operating
253	0.040		4.37	F1	0.040	Normal operating
supplementary information:						
The equipment was connected with Manufacturer's application.						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				N/A
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/A
Capacitance C (μF)		Voltage U (V)	Energy E (J)	
supplementary information:				

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.	
D1 anode to GND		25.8	N/A	N/A
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
supplementary information:				

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Clause	Requirement + Test			Result - Remark		Verdict
2.5	TABLE: Limited power sources					N/A
Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Test condition (Single fault)	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
supplementary information:						

2.10.2	Table: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
Line and Neutral		230	340	Normal operated
Primary and GND(metal chassis)		230	340	Normal operated
Transformer primary and secondary (on PCB)		222	510	Normal operated
Transformer primary and secondary (on Transformer)		222	510	Normal operated
Optocoupler(PC1) primary and secondary		216	360	Normal operated
Optocoupler(PC2) primary and secondary		117	196	Normal operated
AR1 primary and PC2 pin 3		115	216	Normal operated
U3 and R17		117	216	Normal operated
U3 and PC2 pin 1		112	212	Normal operated
supplementary information:				

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Clause	Requirement + Test			Result - Remark			Verdict
2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:		U peak (V)	U r.m.s. (V)	Required cl (mm) **)	cl (mm)	Required cr (mm) *)	cr (mm)
Functional:							
Line and Neutral		340	230	1.8	3.4	1.8	3.4
Basic/supplementary:							
Primary and GND(metal chassis)		340	230	1.8	1.9	1.8	1.9
Reinforced:							
Transformer primary and secondary (on PCB)		510	222	3.6	8.9	3.6	8.9
Transformer primary and secondary (on Transformer)		510	222	3.6	5.3	3.6	6.3
Optocoupler(PC1) primary and secondary		360	216	3.6	8.1	3.6	8.1
Optocoupler(PC2) primary and secondary		196	117	3.6	8.1	3.6	8.1
AR1 primary and PC2 pin 3		216	115	3.6	5.7	3.6	4.3
U3 and R17		216	117	3.6	4.6	3.6	8.0
U3 and PC2 pin 1		212	112	3.6	4.3	3.6	4.7
supplementary information:							
*) means apply for IEC 60112 test.(PCB Material Group II)							
**) If the CREEPAGE DISTANCE derived from Table 2.10.2 is less than the applicable CLEARANCE as determined in 2.10.3 or Annex G, then the value for that CLEARANCE shall be applied for the minimum CREEPAGE DISTANCE.							

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)	
Bobbin for transformer (T1)	510	222	3 000 Vac	> 0.4	> 0.4	
supplementary information:						

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EN 60950-1									
Clause	Requirement + Test					Result - Remark			Verdict
4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available									N/A
Is it possible to install the battery in a reverse polarity position?									N/A
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition*									
Test results:									Verdict
- Chemical leaks									
- Explosion of the battery									
- Emission of flame or expulsion of molten metal									
- Electric strength tests of equipment after completion of tests									
supplementary information:									

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EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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4.3.8	TABLE: Batteries	N/A
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Battery category : Manufacturer : Type / model : Voltage : Capacity : Tested and Certified by (incl. Ref. No.) : Circuit protection diagram: See below
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MARKINGS AND INSTRUCTIONS (1.7.13)
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Location of replaceable battery	
Language(s) :	
Close to the battery :	
In the servicing instructions :	
In the operating instructions :	

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EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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4.5	TABLE: Thermal requirements						P
	Supply voltage (V)	207 V~ 50 Hz	253 V~ 50 Hz	N/A	N/A	N/A	—
	Ambient T _{min} (°C)	23.3	23.3	N/A	N/A	N/A	—
	Ambient T _{max} (°C)	23.4	23.5	N/A	N/A	N/A	—

Maximum measured temperature T of part/at :	T (°C)					Allowed T _{max} (°C)
1. Cord bushing(Inlet)	67.2	67.6	N/A	N/A	N/A	95
2. PCB near F1	67.6	67.8	N/A	N/A	N/A	130
3. IC1 body	67.4	67.7	N/A	N/A	N/A	100
4. PCB near U9_main board	89.8	90.1	N/A	N/A	N/A	130
5. PCB near U12_main board	95.1	95.5	N/A	N/A	N/A	130
6. PCB near U6_main board	91.6	92.2	N/A	N/A	N/A	130
7. CON1 body_SMPS board	76.2	77.2	N/A	N/A	N/A	95
8. PCB near F1_SMPS board	81.2	81.6	N/A	N/A	N/A	130
9. PCB near F2_SMPS board	80.7	81.7	N/A	N/A	N/A	130
10. C5 body_SMPS board	95.3	97.2	N/A	N/A	N/A	105
11. PCB near IC2_SMPS board	111.5	114.9	N/A	N/A	N/A	130
12. L2 coil_SMPS board	87.6	89.5	N/A	N/A	N/A	100
13. C8 body_SMPS board	84.0	84.5	N/A	N/A	N/A	105
14. C9 body_SMPS board	91.4	91.9	N/A	N/A	N/A	105
15. C15 body_SMPS board	90.0	90.8	N/A	N/A	N/A	105
16. PC1 body_SMPS board	89.4	89.7	N/A	N/A	N/A	100
17. T1 coil_SMPS board	99.8	100.5	N/A	N/A	N/A	110 *)
18. T2 core_SMPS board	94.1	95.1	N/A	N/A	N/A	120
19. PCB near BD1_SMPS board	91.4	93.2	N/A	N/A	N/A	105
20. PCB near C6_camera board	78.6	80.5	N/A	N/A	N/A	105
21. Enclosure_inside near T1	74.3	76.1	N/A	N/A	N/A	95
22. Enclosure_outside near T1	70.0	70.5	N/A	N/A	N/A	95
23. Ambient	55 (23.3 °C)	55 (23.5 °C)	N/A	N/A	N/A	N/A

supplementary information:

Maximum temperature T at T_{ma} (55 °C) is calculated. (T at T_{ma} = T - t₂ + T_{ma})

Temperature test was performed with K-type thermo-couple.

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EN 60950-1			
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)
AC connector		> 125	1.2
supplementary information:			

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Enclosure	LOTTE ADVANCED MATERIALS CO LTD	HN-1064(+)	Min 1.5	V-0	UL 94	
PCB	Interchangeable	Interchangeable	-	V-0	UL 796	
supplementary information:						

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Enclosure wrapped metal foil	0.01	0.25	e-C, p1-N/R	
supplementary information:				

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EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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)
Functional:		Breakdown Yes / No	
Mains poles (primary fuse disconnected)		AC	1500
Basic/supplementary:		No	
Between parts separated by basic or supplementary insulation		AC	1500
Reinforced:		No	
Between parts separated by double or reinforced insulation		AC	3000
T1(Mfr.: DONGHEUNGEL ECTRONICSCO., LTD. / DH) / Primary winding(core) and Secondary winding		AC	3000
T1(Mfr.: DONGINSYSTE MCO.,LTD / DI) / Primary winding(core) and Secondary winding		AC	3000
T1(Mfr.: DAERYUNELEC TRONICSCO.,LT D / DR) / Primary winding(core) and Secondary winding		AC	3000
T1(Mfr.: SUN TECH CO., LTD.) / Primary winding(core) and Secondary winding		AC	3000
supplementary information:			
Humidity test performed for 48 h at temp. 30 °C and relative humidity 93 %			

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EN 60950-1						
Clause	Requirement + Test				Result - Remark	
5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)				20-30	—
	Power source for EUT: Manufacturer, model/type, output rating				N/A	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
1. PC2(1-2)	Short	253 Vac	20 min	F1	5.0	FI: 0.04 A, Normal condition NCD,NC,NT,NB,NH
2. PC2(3-4)	Short	253 Vac	20 min	F1	5.0	FI: 0.04 A, Normal condition NCD,NC,NT,NB,NH
3. D1	Short	253 Vac	20 min	F1	5.0	FI: 0.01-0.19 A, IP, LCD out NCD,NC,NT,NB,NH
4. D11	Short	253 Vac	20 min	F1	5.0	FI: 0.01 A, IP, LCD out NCD,NC,NT,NB,NH
5. PC1(1-2)	Short	253 Vac	20 min	F1	5.0	FI: 0.01-0.05 A, IP, LCD out NCD,NC,NT,NB,NH
6. PC1(3-4)	Short	253 Vac	20 min	F1	5.0	FI: 0.01-0.05 A, IP, LCD out NCD,NC,NT,NB,NH
7. D8	Short	253 Vac	20 min	F1	5.0	FI: 0.01 A, IP, LCD out NCD,NC,NT,NB,NH
8. BR1(~+)	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Orisel, OS5, 250 V, T5AL) opened CD(BR1, L2),NC,NT,NB,NH
8-1. BR1(~+)	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Bussmann, SS-5, 250 V, T5AL) opened CD(BR1, L2),NC,NT,NB,NH
9. BR1(~--)	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Orisel, OS5, 250 V, T5AL) opened CD(BR1, L2),NC,NT,NB,NH
9-1. BR1(~--)	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Bussmann, SS-5, 250 V, T5AL) opened CD(BR1, L2),NC,NT,NB,NH
10. C12	Short	253 Vac	20 min	F1	5.0	FI: 0.01-0.05 A, IP, LCD out NCD,NC,NT,NB,NH
11. Power board output (12 Vdc)	Short	253 Vac	20 min	F1	5.0	FI: 0.01 A, LCD out, CD(RS1, RS2, RS3),NC,NT,NB,NH
11-1. Power board output (12 Vdc)	Short	253 Vac	20 min	F1	5.0	FI: 0.02 A, LCD out, CD(RS1, RS2, RS3),NC,NT,NB,NH
11-2. Power board output (12 Vdc)	Short	253 Vac	20 min	F1	5.0	FI: 0.01 A, LCD out, CD(RS1, RS2, RS3),NC,NT,NB,NH

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

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
12. C5	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Orisel, OS5, 250 V, T5AL) opened NCD,NC,NT,NB,NH
12-1. C5	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Bussmann, SS-5, 250 V, T5AL) opened NCD,NC,NT,NB,NH
13. IC2(6-3)	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Orisel, OS5, 250 V, T5AL) opened CD(IC2),NC,NT,NB,NH
13-1. IC2(6-3)	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Bussmann, SS-5, 250 V, T5AL) opened CD(IC2),NC,NT,NB,NH
14. IC2(6-4)	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Orisel, OS5, 250 V, T5AL) opened CD(IC2),NC,NT,NB,NH
14-1. IC2(6-4)	Short	253 Vac	1 s	F1	5.0	FI: 0 A, F1, F2 (Bussmann, SS-5, 250 V, T5AL) opened CD(IC2),NC,NT,NB,NH

supplementary information:

FI – Final Input Current; IP – Internal protection operated;
 CD – Component Damaged (list damaged components); NCD – No Component Damaged;
 CT – Constant temperatures were obtained (list components: temperature;);
 NB – No indication of dielectric breakdown; YB – Dielectric breakdown (indicate time and location);
 NC – Cheesecloth remained intact; YC – Cheesecloth charred or flamed;
 NT – Tissue paper remained intact; YT – Tissue paper charred or flamed;

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Clause	Requirement + Test	Result - Remark	Verdict
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C.2	TABLE: transformers		P
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Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength/ V (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
T1	Primary winding and Secondary winding	510	222	3 000 Vac	3.6	3.6	>0.4 mm/ Min. 2 layer/ Annex U
	Primary winding and core	510	222	1 772 Vac	2.2	2.5	>0.4 mm/ Min. 2 layer/ Annex U
	Core and Secondary winding	510	222	1 772 Vac	2.2	2.5	>0.4 mm/ Min. 2 layer/ Annex U
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T1	Primary winding and Secondary winding			3 000 Vac	5.3	6.3	¹⁾
	Primary winding and core			1 772 Vac	3.0	3.0	²⁾
	Core and Secondary winding			1 772 Vac	3.0	3.0	²⁾

supplementary information:

- 1) 2 layers insulation tape and Bobbin min. > 0.40 mm thickness
- 2) Basic insulation part is consist of bobbin and barrier tape.
- *) Transformer all type same result.

EN 60950-1

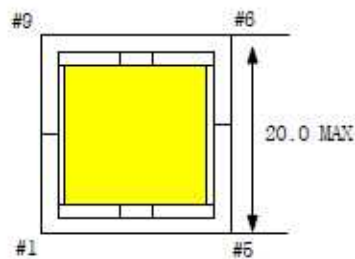
Clause	Requirement + Test	Result - Remark	Verdict
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C.2 TABLE: transformers

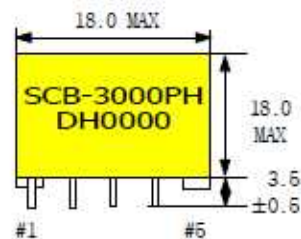
P

Type : SCB-3000PH

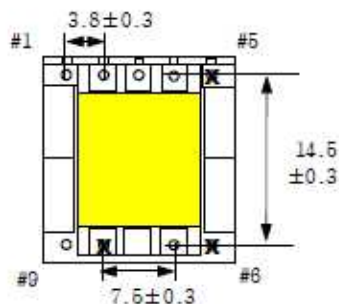
6. APPEARANCE & DIMENSION (UNIT:mm)



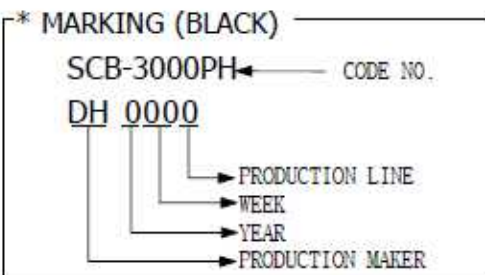
<TOP VIEW>



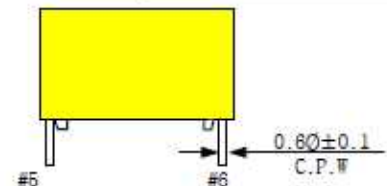
<SIDE VIEW>



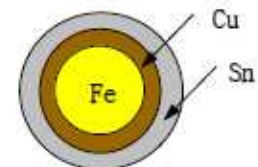
<BOTTOM VIEW>



* PRODUCTION LINE
1. A : CHUN AN
2. B : BAZHOU
3. Y : YANTAI



함침 전 코아 외장TAPE
보빈 끝면을 기준으로
0.025u W=13.0mm
3Ts(YELLOW)



* PIN REMOVE : #5,6,8

* PIN LENGTH : BEFORE SOLDERING

* 함침 작업시 VARNISH가 WINDING 1차 내부까지 침투되도록
작업 후 반드시 확인 할 것. (파괴검사)

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
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2						
3						
4						

0705-00양식04

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EN 60950-1

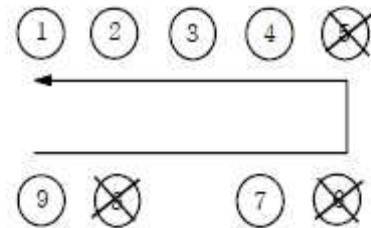
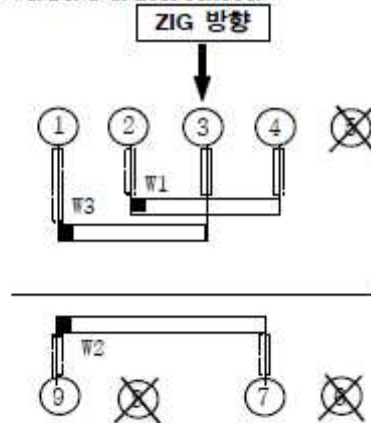
Clause	Requirement + Test	Result - Remark	Verdict
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C.2 TABLE: transformers

P

Type : SCB-3000PH

7. WINDING SPECIFICATION



WINDING	BOTTOM VIEW	C.C.W
REMOVED PIN	#5,6,8	
CUT PIN		
TUBE PIN	ALL	

8. WINDING SPECIFICATION

WINDING ORDER	TERMINAL		WIRE	TURNS	WINDING METHOD	INSULATION	
	S	F				SPEC	Ts
W1	2	4	UEW 0.16 Ø	75 T	SOLENOID	25u W=10.0mm	3
W2	9	7	UEW 0.30 Ø	11 T	SOLENOID	25u W=10.0mm	3
W3	1	3	UEW 0.20 Ø	13 T	SOLENOID	25u W=10.0mm{Y}	3
CORE FIXING TAPE						25u W=4.5mm{Y}	3
합권 전 CORE 외장TAPE						25u W=13.0mm{Y}	3

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
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2						
3						
4						

0705-00양식04

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EN 60950-1

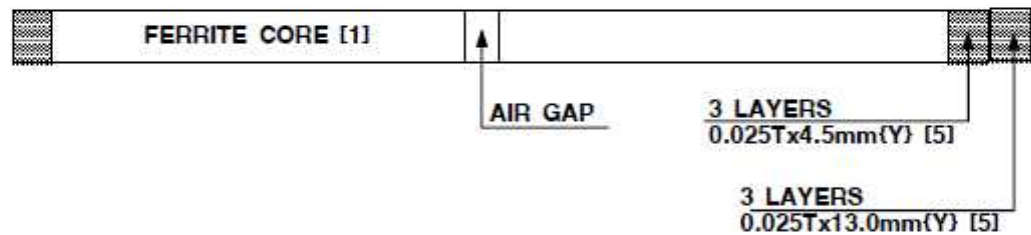
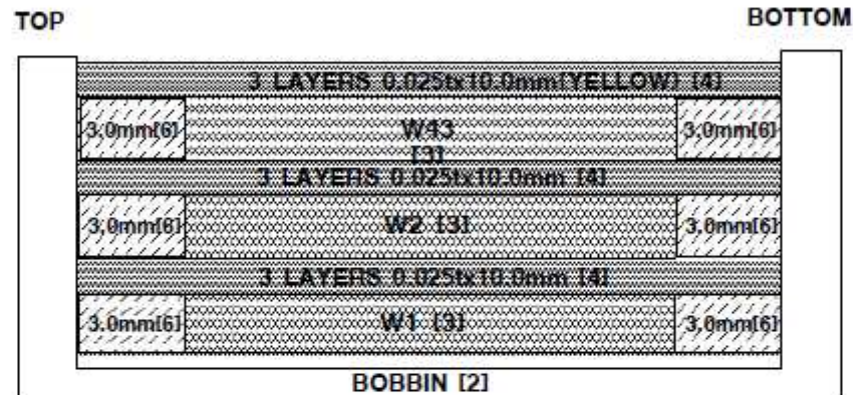
Clause	Requirement + Test	Result - Remark	Verdict
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C.2 **TABLE: transformers**

P

Type : SCB-3000PH

12. INTERNAL CONSTRUCTION

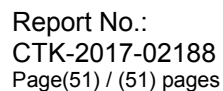


- WINDING
- P.S TAPE
- BARRIER TAPE

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
2						
3						
4						

0705-00양식04

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Attachment 1 – European Group Differences and National Differences

Clause	Requirement + Test	Result - Remark	Verdict
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ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

Differences according to : EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013

Attachment Form No. : EU_GD_IEC60950_1F

Attachment Originator..... : SGS Fimko Ltd

Master Attachment : Date 2014-02

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EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"		P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 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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Attachment 1 – European Group Differences and National Differences

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P
General (A2:2013)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60950-1 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 60950-1 applies.		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		P
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *		P

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IEC60950_1F - ATTACHMENT			
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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: - is designed to allow the user to listen to recorded or broadcast sound or video; and - primarily uses headphones or earphones that can be worn in or on or around the ears; and - allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: - while the personal music player is connected to an external amplifier; or - while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: - hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.		N/A

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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	- analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		N/A
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: - equipment provided as a package (personal music player with its listening device), where - the acoustic output LAeq,T is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and - a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx. All other equipment shall: - protect the user from unintentional acoustic outputs exceeding those mentioned above; and - have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

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

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

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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: - with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and - respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and - with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;		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. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A

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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)									
Clause	Requirement + Test	Result - Remark	Verdict						
3.2.5.1	Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F2”. In Table 3B, replace the first four lines by the following: <table><tr><td>Up to and including 6 </td><td>0,75 ^{a)} </td></tr><tr><td>Over 6 up to and including 10 (0,75) ^{b)}</td><td>1,0 </td></tr><tr><td>Over 10 up to and including 16 (1,0) ^{c)}</td><td>1,5 </td></tr></table> In the conditions applicable to Table 3B delete the words “in some countries” in condition ^{a)}. In NOTE 1, applicable to Table 3B, delete the second sentence.	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/A
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)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N/A						
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: <table><tr><td>Over 10 up to and including 16 </td><td>1,5 to 2,5 </td><td>1,5 to 4 </td></tr></table> Delete the fifth line: conductor sizes for 13 to 16 A	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4		N/A			
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4							
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).		N/A						
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A						
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/A						

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IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	Additional EN standards.		N/A

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.2.13.14 (A11:2009)	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1 (A11:2009)	In Finland , Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In Finland , Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

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IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"		N/A
1.7.2.1 (A11:2009)	In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."		

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Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”		N/A
1.7.2.1 (A2:2013)	In Denmark, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in Denmark shall be as follows: In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”		N/A
1.7.5	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A
1.7.5 (A11:2009)	For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		

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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c		N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
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/A
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16 A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		N/A
3.2.1.1	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. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A

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Attachment 1 – European Group Differences and National Differences

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1 (A2:2013)	In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c		N/A
3.2.1.1	In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A
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/A

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Attachment 1 – European Group Differences and National Differences

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
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/A
3.2.4	In Switzerland , for requirements see 3.2.1.1 of this annex.		N/A
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/A
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/A
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/A
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A

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Attachment 1 – European Group Differences and National Differences

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A

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IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		N/A

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Attachment 1 – European Group Differences and National Differences

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
6.1.2.2	In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3 (A11:2009)	In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

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Attachment 1 – European Group Differences and National Differences

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Annex ZD (informative)

IEC and CENELEC code designations for flexible cords

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

Attachment 2 – Photographs

<Photo 1 > Front view

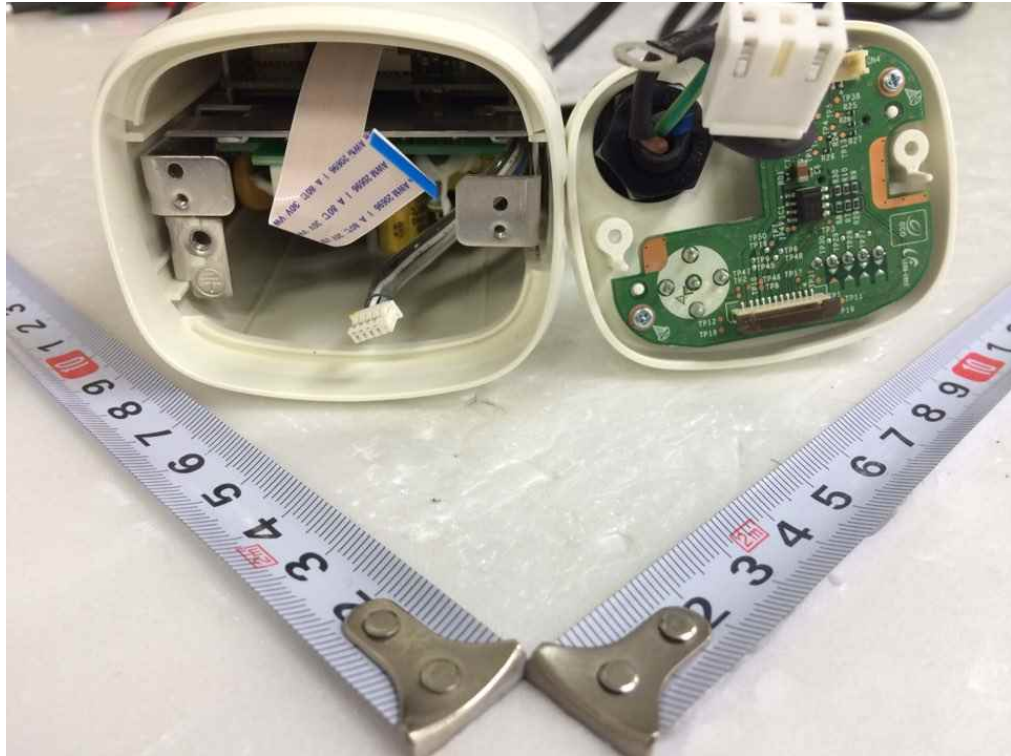


<Photo 2 > Rear view



Attachment 2 – Photographs

<Photo 3 > Internal view



<Photo 4 > Internal view

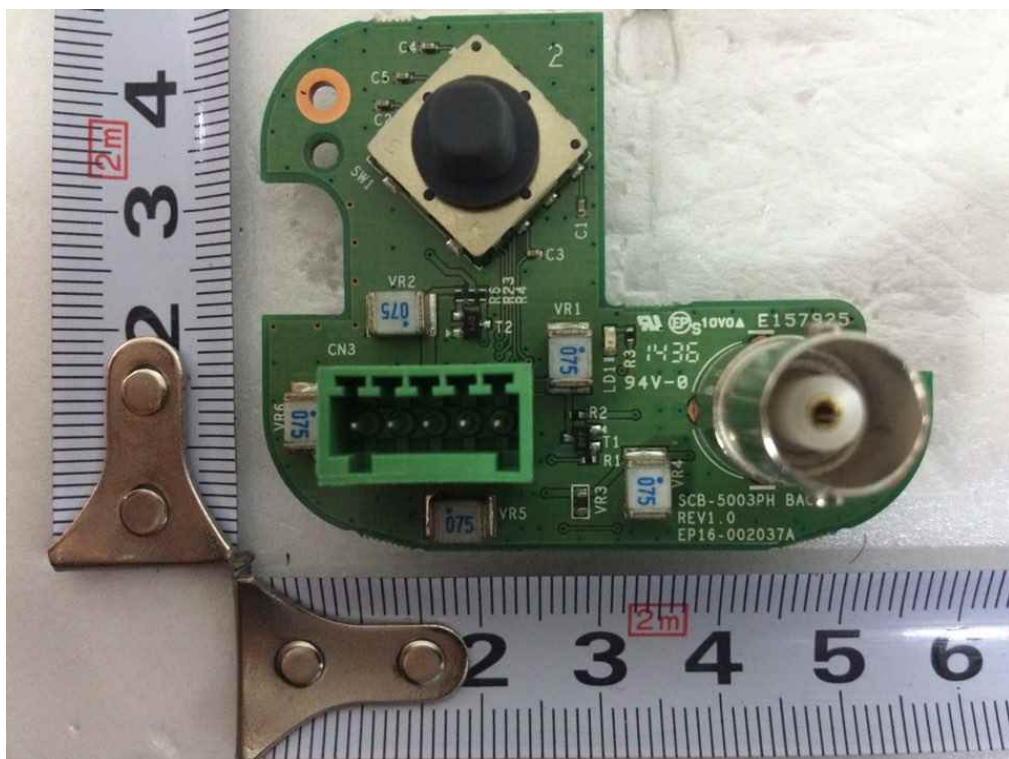


Attachment 2 – Photographs

<Photo 5 > Internal view

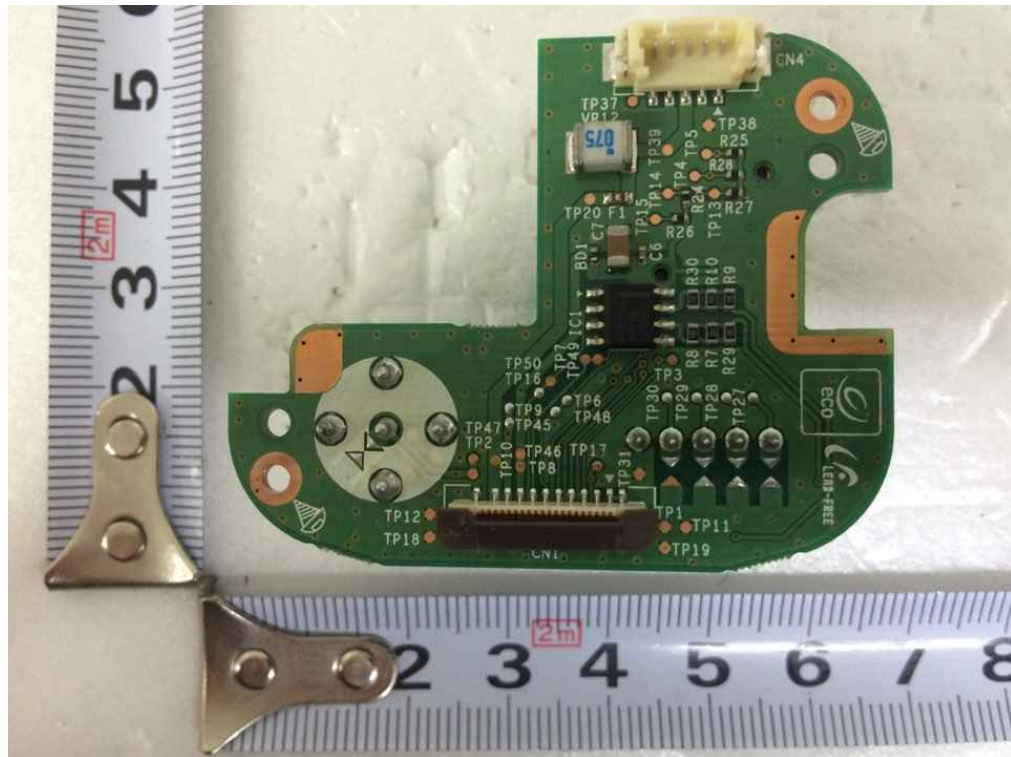


<Photo 6 > INTERFACE board top view



Attachment 2 – Photographs

<Photo 7 > INTERFACE board bottom view

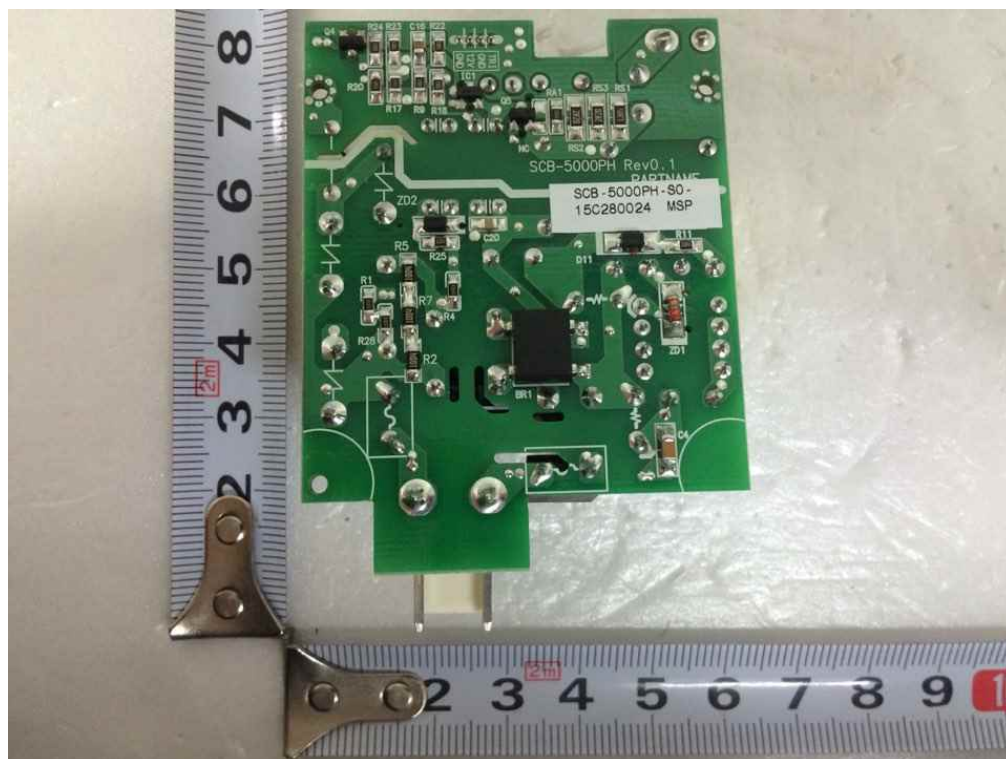


<Photo 8 > SMPS board top view



Attachment 2 – Photographs

<Photo 9 > SMPS board bottom view

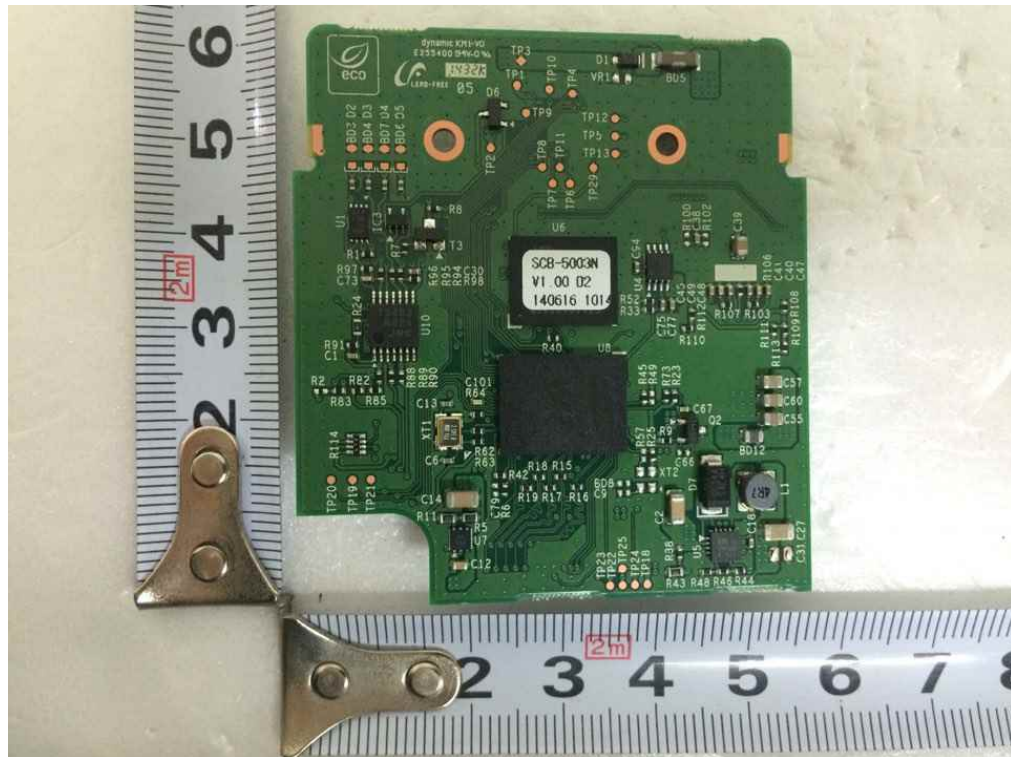


<Photo 10 > Main board top view



Attachment 2 – Photographs

<Photo 11 > Main board bottom view



<Photo 12 > Sensor board top view



Attachment 2 – Photographs

<Photo 13 > Sensor board bottom view

