



# TEST REPORT

**Report No.:** NTEK-2012DG1218031S

**Product:** Fingerprint Time Attendance & Access Control System

**Model No.:** iKiosk 100 Plus

**Applicant:** FINGERTEC WORLDWIDE SDN BHD

**Address:** NO. 6, 8 & 10 JALAN BK 3/2, BANDAR KINRARA PUCHONG  
47180 SELANGOR

**Issued by:** NTEK Testing Technology Co., Ltd.

**Lab** 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang

**Location:** Street, Bao'an District, Shenzhen P.R. China

**Tel:** (86)-0755-61156588

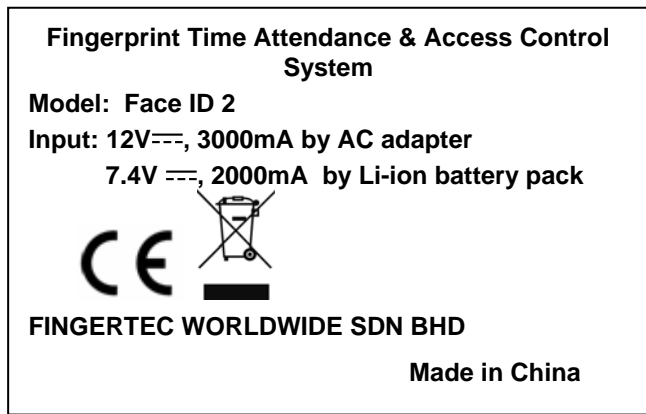

**Fax:** (86)-0755-61156599

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<b>TEST REPORT</b> <b>IEC 60950-1</b> <b>Information technology equipment – Safety –</b> <b>Part 1: General requirements</b>	
Report Number.....	NTEK-2012DG1218031S
Tested by (+ signature) .....	Ethan Chen <i>ethan chen</i>
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Date of issue .....	December. 20, 2012
Total number of pages.....	40 pages
<b>Testing laboratory</b> .....	Shenzhen NTEK Testing Technology Co., Ltd.
Address .....	West of 1/F., Building E, Fenda Science Park, Sanwei, Xixiang, Bao'an District, Shenzhen, Guangdong, China
Testing location .....	As above
<b>Applicant's name</b> .....	FINGERTEC WORLDWIDE SDN BHD
Address.....	NO. 6, 8 & 10 JALAN BK 3/2, BANDAR KINRARA PUCHONG 47180 SELANGOR
<b>Test specification:</b>	
Standard .....	IEC 60950-1:2005 (Second Edition), Am 1: 2009
Test procedure.....	CB Scheme
Non-standard test method.....	N/A
<b>Test Report Form No.</b> .....	<b>IEC60950_1B</b>
Test Report Form(s) Originator.....	SGS Fimko Ltd
Master TRF .....	Dated 2010-04
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<b>Test item description</b> .....	Fingerprint Time Attendance & Access Control System
Trade Mark .....	FINGERTEC
Manufacturer.....	Same as applicant
Model/Type reference .....	iKiosk 100 Plus
Ratings.....	Input: 12V $\overline{=}$ , 3A Powered by AC adapter Or Powered by Li-ion Battery pack: 7.4V $\overline{=}$ ; 2000mA

<b>Summary of testing:</b>
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<p><b>Tests performed (name of test and test clause):</b>  <b>EN 60950-1: 2006+A11:2009+A1:2010+A12:2011.</b>          The submitted samples were found to comply with the requirements of above specification.</p>	<p><b>Testing location:</b>          West of 1/F., Building E, Fenda Science Park,          Sanwei, Xixiang, Bao'an District, Shenzhen,          Guangdong, China</p>
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<p><b>Copy of marking plate</b></p> <p>The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.</p> <p>(Additional requirements for markings. See 1.7 NOTE)</p> <div data-bbox="574 739 1222 1151" data-label="Image">  <p style="text-align: center;"><b>Fingerprint Time Attendance &amp; Access Control System</b></p> <p><b>Model: Face ID 2</b></p> <p><b>Input: 12V AC, 3000mA by AC adapter</b>  <b>7.4V Li-ion, 2000mA by Li-ion battery pack</b></p> <p style="text-align: center;"></p> <p style="text-align: center;"><b>FINGERTEC WORLDWIDE SDN BHD</b></p> <p style="text-align: right;"><b>Made in China</b></p> </div> <p>Remark on above marking:          1, The height of CE symbols is more than 5 mm;          2, The height of WEEE symbols is more than 7 mm;</p>
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<b>Test item particulars</b> .....	
Equipment mobility .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains
Operating condition .....	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location .....	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values .....	N/A
Tested for IT power systems .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V) .....	N/A
Class of equipment .....	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A) .....	16A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class .....	IP20
Altitude during operation (m) .....	<2000m
Altitude of test laboratory (m) .....	<2000m
Mass of equipment (kg) .....	<5Kg
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....	N/A (or N)
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>Testing</b> .....	
Date of receipt of test item .....	Dec. 13, 2012
Date(s) of performance of tests.....	Dec. 13, 2012 – Dec. 19, 2012

**General remarks:**

The test results presented in this report relate only to the object tested.  
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.  
"(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.

**General product information:**

- EUT is a Fingerprint Time Attendance & Access Control System manufactured by FINGERTEC WORLDWIDE SDN BHD.
- Powered by AC adapter: Input: 100-240V~, 50/60Hz, 1.5A Max  
Output: 12V==, 3A and the AC adapter get CB/CE approval issued by TUV-rh.
- The EUT is Building-in equipment according to the information technology equipment.
- The maximum operating temperature is 45°C declared by the client.

**Abbreviations used in the report:**

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>1</b>	<b>GENERAL</b>		<b>P</b>
<b>1.5</b>	<b>Components</b>		<b>P</b>
1.5.1	General		<b>P</b>
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	<b>P</b>
1.5.2	Evaluation and testing of components		<b>P</b>
1.5.3	Thermal controls		<b>N</b>
1.5.4	Transformers		<b>N</b>
1.5.5	Interconnecting cables		<b>N</b>
1.5.6	Capacitors bridging insulation	No such capacitors	<b>N</b>
1.5.7	Resistors bridging insulation	No such resistors	<b>N</b>
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		<b>N</b>
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No such resistors	<b>N</b>
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such resistors	<b>N</b>
1.5.8	Components in equipment for IT power systems		<b>N</b>
1.5.9	Surge suppressors		<b>N</b>
1.5.9.1	General		<b>N</b>
1.5.9.2	Protection of VDRs		<b>N</b>
1.5.9.3	Bridging of functional insulation by a VDR		<b>N</b>
1.5.9.4	Bridging of basic insulation by a VDR		<b>N</b>
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		<b>N</b>
<b>1.6</b>	<b>Power interface</b>		<b>N</b>
1.6.1	AC power distribution systems		<b>N</b>
1.6.2	Input current	(see appended table 1.6.2)	<b>N</b>
1.6.3	Voltage limit of hand-held equipment	Class III equipment	<b>N</b>
1.6.4	Neutral conductor		<b>N</b>
<b>1.7</b>	<b>Marking and instructions</b>		<b>P</b>
1.7.1	Power rating and identification markings	12V $\overline{=}$ 3A	<b>P</b>
1.7.1.1	Power rating marking		<b>P</b>
	Multiple mains supply connections.....:		<b>N</b>
	Rated voltage(s) or voltage range(s) (V) .....	See above	<b>P</b>
	Symbol for nature of supply, for d.c. only .....	$\overline{=}$	<b>P</b>
	Rated frequency or rated frequency range (Hz) .....		<b>N</b>

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (mA or A) .....	See above	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....	FINGERTEC WORLDWIDE SDN BHD	P
	Model identification or type reference .....	iKiosk 100 Plus	P
	Symbol for Class II equipment only .....		N
	Other markings and symbols .....	CE Mark	P
1.7.2	Safety instructions and marking	Operating/safety instructions made available to the user.	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices		N
1.7.2.3	Overcurrent protective device	No overcurrent protective device	N
1.7.2.4	IT power distribution systems	Class III equipment	N
1.7.2.5	Operator access with a tool		N
1.2.7.6	Ozone	No ozone	N
1.7.3	Short duty cycles	Continuous operation	N
1.7.4	Supply voltage adjustment .....		N
	Methods and means of adjustment; reference to installation instructions .....		N
1.7.5	Power outlets on the equipment .....	No standard power outlets	N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....		N
1.7.7	Wiring terminals	No such terminals	N
1.7.7.1	Protective earthing and bonding terminals .....	Class III equipment	N
1.7.7.2	Terminals for a.c. mains supply conductors		N
1.7.7.3	Terminals for d.c. mains supply conductors		N
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking .....		N
1.7.8.2	Colours .....		P
1.7.8.3	Symbols according to IEC 60417 .....	No used symbols	N
1.7.8.4	Markings using figures .....		N
1.7.9	Isolation of multiple power sources .....	No multiple power sources	N
1.7.10	Thermostats and other regulating devices .....	No such regulating device.	N
1.7.11	Durability	The marking withstand the required test.	P
1.7.12	Removable parts		N
1.7.13	Replaceable batteries .....		P
	Language(s) .....	English	—
1.7.14	Equipment for restricted access locations.....		N

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

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Supplied from SELV only.	P
2.1.1.1	Access to energized parts		N
	Test by inspection .....		N
	Test with test finger (Figure 2A) .....		N
	Test with test pin (Figure 2B) .....		N
	Test with test probe (Figure 2C) .....		N
2.1.1.2	Battery compartments		N
2.1.1.3	Access to ELV wiring	No ELV circuit	N
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage circuit wiring.	N
2.1.1.5	Energy hazards .....	(see appended tables 2.1.1.5)	P
2.1.1.6	Manual controls		N
2.1.1.7	Discharge of capacitors in equipment		N
	Measured voltage (V); time-constant (s) .....		—
2.1.1.8	Energy hazards – d.c. mains supply		N
	a) Capacitor connected to the d.c. mains supply .....		N
	b) Internal battery connected to the d.c. mains supply .....		N
2.1.1.9	Audio amplifiers .....	See cl. 2.1.1.1 See separate test report IEC/EN 60065	N
2.1.2	Protection in service access areas		N
2.1.3	Protection in restricted access locations		N

<b>2.2</b>	<b>SELV circuits</b>		P
2.2.1	General requirements	(see appended table 2.2)	P
2.2.2	Voltages under normal conditions (V) .....	< 60V d.c.	P
2.2.3	Voltages under fault conditions (V) .....	< 60V d.c.	P
2.2.4	Connection of SELV circuits to other circuits .....		N

<b>2.3</b>	<b>TNV circuits</b>		N
2.3.1	Limits	No TNV circuits	N
	Type of TNV circuits .....		—
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions .....		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed .....		—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed .....		—
2.3.5	Test for operating voltages generated externally		N

<b>2.4</b>	<b>Limited current circuits</b>		N
2.4.1	General requirements	No such circuits.	N
2.4.2	Limit values		N
	Frequency (Hz) .....		—
	Measured current (mA) .....		—
	Measured voltage (V) .....		—
	Measured circuit capacitance (nF or $\mu$ F) .....		—
2.4.3	Connection of limited current circuits to other circuits		N

<b>2.5</b>	<b>Limited power sources</b>	(see appended table 2.5)	N
	a) Inherently limited output		N
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition		N
	d) Overcurrent protective device limited output		N
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....		—
	Current rating of overcurrent protective device (A) ..		—
	Use of integrated circuit (IC) current limiters	(See Annex CC)	

<b>2.6</b>	<b>Provisions for earthing and bonding</b>		N
2.6.1	Protective earthing	Class III equipment	N
2.6.2	Functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		N
2.6.3.1	General		N
2.6.3.2	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area ( $\text{mm}^2$ ), AWG :		—
2.6.3.3	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area ( $\text{mm}^2$ ), AWG :		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		
2.6.3.4	Resistance of earthing conductors and their terminations; resistance ( $\Omega$ ), voltage drop (V), test current (A), duration (min) .....		N
2.6.3.5	Colour of insulation .....		N
2.6.4	Terminals		N
2.6.4.1	General		N
2.6.4.2	Protective earthing and bonding terminals		N
	Rated current (A), type, nominal thread diameter (mm) .....		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N
2.6.5	Integrity of protective earthing		N
2.6.5.1	Interconnection of equipment		N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N
2.6.5.3	Disconnection of protective earth		N
2.6.5.4	Parts that can be removed by an operator		N
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		N
2.6.5.7	Screws for protective bonding		N
2.6.5.8	Reliance on telecommunication network or cable distribution system		N

<b>2.7</b>	<b>Overcurrent and earth fault protection in primary circuits</b>		N
2.7.1	Basic requirements	No primary circuits.	N
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7		N
2.7.3	Short-circuit backup protection		N
2.7.4	Number and location of protective devices .....		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel.....		N

<b>2.8</b>	<b>Safety interlocks</b>		N
2.8.1	General principles	No safety interlocks used	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
	Protection against extreme hazard		N

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches, relays and their related circuits		N
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test	(see appended table 5.2)	N
2.8.8	Mechanical actuators		N

<b>2.9</b>	<b>Electrical insulation</b>		P
2.9.1	Properties of insulating materials	Adequate clearances and creepage distances	P
2.9.2	Humidity conditioning	40°C, 93%, 120h, No dielectric breakdown	P
	Relative humidity (%), temperature (°C) .....		—
2.9.3	Grade of insulation	Functional insulation	P
2.9.4	Separation from hazardous voltages		N
	Method(s) used .....		—

<b>2.10</b>	<b>Clearances, creepage distances and distances through insulation</b>		P
2.10.1	General		P
2.10.1.1	Frequency .....		N
2.10.1.2	Pollution degrees .....	Pollution Degree 2	P
2.10.1.3	Reduced values for functional insulation		N
2.10.1.4	Intervening unconnected conductive parts		N
2.10.1.5	Insulation with varying dimensions		N
2.10.1.6	Special separation requirements		N
2.10.1.7	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage		N
2.10.2.1	General		N
2.10.2.2	RMS working voltage		N
2.10.2.3	Peak working voltage		N
2.10.3	Clearances		N
2.10.3.1	General		N
2.10.3.2	Mains transient voltages		N
	a) AC mains supply .....		N
	b) Earthed d.c. mains supplies .....		N
	c) Unearthed d.c. mains supplies .....		N

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) Battery operation .....		N
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	N
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	N
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N
2.10.3.6	Transients from a.c. mains supply .....		N
2.10.3.7	Transients from d.c. mains supply .....		N
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....		N
2.10.3.9	Measurement of transient voltage levels		N
	a) Transients from a mains supply		N
	For an a.c. mains supply .....		N
	For a d.c. mains supply .....		N
	b) Transients from a telecommunication network :		N
2.10.4	Creepage distances		N
2.10.4.1	General		N
2.10.4.2	Material group and comparative tracking index		N
	CTI tests .....	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	N
2.10.5	Solid insulation		N
2.10.5.1	General		N
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	N
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		N
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N
2.10.5.6	Thin sheet material – General		N
2.10.5.7	Separable thin sheet material		
	Number of layers (pcs) .....		—
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.10	Thin sheet material – alternative test procedure		N
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components		N
2.10.5.12	Wire in wound components		N

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage .....		N
	a) Basic insulation not under stress .....		N
	b) Basic, supplementary, reinforced insulation .....		N
	c) Compliance with Annex U .....		N
	Two wires in contact inside wound component; angle between 45° and 90° .....		N
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test	(see appended table 2.10.5)	—
	Routine test		N
2.10.5.14	Additional insulation in wound components		N
	Working voltage .....		N
	- Basic insulation not under stress .....		N
	- Supplementary, reinforced insulation .....		N
2.10.6	Construction of printed boards		N
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	N
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4)	N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation	(see appended table 2.10.5)	N
	Number of insulation layers (pcs).....		N
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	N
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test	(see appended table 5.2)	N
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		N
<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		<b>P</b>
3.1	General		<b>P</b>
3.1.1	Current rating and overcurrent protection		<b>P</b>

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors	(see appended table 5.2)	P
3.1.5	Beads and ceramic insulators		N
3.1.6	Screws for electrical contact pressure		N
3.1.7	Insulating materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws		N
3.1.9	Termination of conductors		N
	10 N pull test		N
3.1.10	Sleeving on wiring		N

<b>3.2</b>	<b>Connection to a mains supply</b>		N
3.2.1	Means of connection		N
3.2.1.1	Connection to an a.c. mains supply		N
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment		N
	Number of conductors, diameter of cable and conduits (mm) .....		—
3.2.4	Appliance inlets		N
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N
	Type .....		—
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
3.2.5.2	DC power supply cords		N
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N) .....		—
	Longitudinal displacement (mm) .....		—
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N
	Diameter or minor dimension D (mm); test mass (g) :		—
	Radius of curvature of cord (mm).....		—
3.2.9	Supply wiring space		N

<b>3.3</b>	<b>Wiring terminals for connection of external conductors</b>		N
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ) .....		—
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm) .....		—
3.3.6	Wiring terminal design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N
<b>3.4</b>	<b>Disconnection from the mains supply</b>		N
3.4.1	General requirement		N
3.4.2	Disconnect devices		N
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords		N
3.4.6	Number of poles - single-phase and d.c. equipment		N
3.4.7	Number of poles - three-phase equipment		N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N
<b>3.5</b>	<b>Interconnection of equipment</b>		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits .....		P
3.5.3	ELV circuits as interconnection circuits		N
3.5.4	Data ports for additional equipment		P
<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		P
4.1	Stability		N
	Angle of 10°		N
	Test force (N) .....		N
<b>4.2</b>	<b>Mechanical strength</b>		P
4.2.1	General		P
	Rack-mounted equipment.	(see Annex DD)	P
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		N

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		N
	Fall test		N
	Swing test		N
4.2.6	Drop test; height (mm) ..... :	1000mm±10mm	P
4.2.7	Stress relief test	No danger Parts	N
4.2.8	Cathode ray tubes	No CRT	N
	Picture tube separately certified ..... :	(see separate test report or attached certificate)	N
4.2.9	High pressure lamps	No such lamps	N
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :		N
4.2.11	Rotating solid media		N
	Test to cover on the door.....:		N

<b>4.3</b>	<b>Design and construction</b>		P
4.3.1	Edges and corners		P
4.3.2	Handles and manual controls; force (N) ..... :		N
4.3.3	Adjustable controls	No such controls	N
4.3.4	Securing of parts		N
4.3.5	Connection by plugs and sockets	Non direct plug-in equipment	N
4.3.6	Direct plug-in equipment		N
	Torque ..... :		—
	Compliance with the relevant mains plug standard . :		N
4.3.7	Heating elements in earthed equipment	No heating elements	N
4.3.8	Batteries	(see appended tables 4.3.8)	P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery	See appended table 4.3.8.	P
	- Excessive discharging rate for any battery	See appended table 4.3.8.	P
4.3.9	Oil and grease	No oil and grease.	N
4.3.10	Dust, powders, liquids and gases	No dust, powders, liquids and gases.	N
4.3.11	Containers for liquids or gases	No containers for liquid and gases.	N
4.3.12	Flammable liquids ..... :	No flammable liquid.	N
	Quantity of liquid (l) ..... :		N
	Flash point (°C) ..... :		N
4.3.13	Radiation		P
4.3.13.1	General		P



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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.2	Ionizing radiation		N
	Measured radiation (pA/kg) .....		—
	Measured high-voltage (kV) .....		—
	Measured focus voltage (kV) .....		—
	CRT markings .....		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The equipment does not produce UV radiation.	N
	Part, property, retention after test, flammability classification .....		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....	The equipment does not produce UV radiation.	N
4.3.13.5	Lasers (including laser diodes) and LEDs	LEDs as backlight for LCD display screen.	P
4.3.13.5.1	Lasers (including laser diodes)	(see separate test report of IEC/EN 60825-1 / IEC/EN 60825-2)	N
	Laser class .....		—
4.3.13.5.2	Light emitting diodes (LEDs)		
4.3.13.6	Other types .....	The equipment does not generate other types of radiation.	N

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

<b>4.5</b>	<b>Thermal requirements</b>		P
4.5.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.5.2	Temperature tests		P
	Normal load condition per Annex L .....		—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat .....	(see appended table 4.5.5)	N

<b>4.6</b>	<b>Openings in enclosures</b>		N
4.6.1	Top and side openings	No openings	N
	Dimensions (mm) .....		—
4.6.2	Bottoms of fire enclosures		N
	Construction of the bottom, dimensions (mm) .....		—
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment		N
4.6.4.1	Constructional design measures		N
	Dimensions (mm) .....		—
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C), time (weeks) .....		—

<b>4.7</b>	<b>Resistance to fire</b>		P
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General	PCB: V-0. Enclosure: V-1	P
4.7.3.2	Materials for fire enclosures		P
4.7.3.3	Materials for components and other parts outside fire enclosures	No components outside enclosure	N
4.7.3.4	Materials for components and other parts inside fire enclosures		P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N

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Clause	Requirement + Test	Result - Remark	Verdict
<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		<b>P</b>
5.1	Touch current and protective conductor current		N
5.1.1	General	(see appended Table 5.1)	N
5.1.2	Configuration of equipment under test (EUT)		N
5.1.2.1	Single connection to an a.c. mains supply		N
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N
5.1.3	Test circuit		N
5.1.4	Application of measuring instrument		N
5.1.5	Test procedure		N
5.1.6	Test measurements		N
	Supply voltage (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
5.1.7.1	General .....		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N
	Supply voltage (V) .....		—
	Measured touch current (mA) .....		—
	Max. allowed touch current (mA) .....		—
5.1.8.2	Summation of touch currents from telecommunication networks		N
	a) EUT with earthed telecommunication ports .....		N
	b) EUT whose telecommunication ports have no reference to protective earth		N
<b>5.2</b>	<b>Electric strength</b>		<b>P</b>
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		N
<b>5.3</b>	<b>Abnormal operating and fault conditions</b>		<b>P</b>



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	N
5.3.2	Motors	(see appended Annex B)	N
5.3.3	Transformers	(see appended Annex C)	N
5.3.4	Functional insulation.....:		P
5.3.5	Electromechanical components		N
5.3.6	Audio amplifiers in ITE .....:	See separate test report IEC/EN 60065	N
5.3.7	Simulation of faults	Without thermostats, Temperature limiters and thermal CUT-OUTS.	P
5.3.8	Unattended equipment	(See appended table 5.3)	N
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P

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

<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		N
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements	(see appended table 5.2)	N
	Supply voltage (V) .....		—
	Current in the test circuit (mA) .....		—
6.1.2.2	Exclusions .....		N

<b>6.2</b>	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		N
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test	(see appended table 5.2)	N
6.2.2.2	Steady-state test	(see appended table 5.2)	N
6.2.2.3	Compliance criteria		N

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

<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N
7.1	General		N
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N
7.4.2	Voltage surge test	(see appended table 5.2)	N
7.4.3	Impulse test	(see appended table 5.2)	N

<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>	N
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N
A.1.1	Samples .....		—
	Wall thickness (mm).....		—
A.1.2	Conditioning of samples; temperature (°C) .....		N
A.1.3	Mounting of samples .....		N
A.1.4	Test flame (see IEC 60695-11-3)		N
	Flame A, B, C or D .....		—
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	Sample 1 burning time (s) .....		—
	Sample 2 burning time (s) .....		—
	Sample 3 burning time (s) .....		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N
A.2.1	Samples, material .....		—
	Wall thickness (mm).....		—
A.2.2	Conditioning of samples; temperature (°C) .....		N
A.2.3	Mounting of samples .....		N
A.2.4	Test flame (see IEC 60695-11-4)		N
	Flame A, B or C .....		—
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	Sample 1 burning time (s) .....		—
	Sample 2 burning time (s) .....		—
	Sample 3 burning time (s) .....		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N
	Sample 1 burning time (s) .....		—
	Sample 2 burning time (s) .....		—
	Sample 3 burning time (s) .....		—
A.3	Hot flaming oil test (see 4.6.2)		N
A.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N
<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		N
B.1	General requirements		N

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		N
B.3	Maximum temperatures	(see appended table 5.3)	N
B.4	Running overload test	(see appended table 5.3)	N
B.5	Locked-rotor overload test		N
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for d.c. motors in secondary circuits		N
B.6.1	General		N
B.6.2	Test procedure		N
B.6.3	Alternative test procedure		N
B.6.4	Electric strength test; test voltage (V) .....		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N
B.7.1	General		N
B.7.2	Test procedure		N
B.7.3	Alternative test procedure		N
B.7.4	Electric strength test; test voltage (V) .....		N
B.8	Test for motors with capacitors	(see appended table 5.3)	N
B.9	Test for three-phase motors	(see appended table 5.3)	N
B.10	Test for series motors		N
	Operating voltage (V) .....		—

<b>C</b>	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		N
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
	Method of protection .....		—
C.1	Overload test	(see appended table 5.3)	N
C.2	Insulation	(see appended tables 5.2 and C2)	N
	Protection from displacement of windings.....		N

<b>D</b>	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		N
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
D.1	Measuring instrument		N
D.2	Alternative measuring instrument		N
<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N
<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		N
<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N
G.1	Clearances		N
G.1.1	General		N
G.1.2	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V)		N
G.2.1	AC mains supply .....		N
G.2.2	Earthed d.c. mains supplies .....		N
G.2.3	Unearthed d.c. mains supplies .....		N
G.2.4	Battery operation .....		N
G.3	Determination of telecommunication network transient voltage (V) .....		N
G.4	Determination of required withstand voltage (V)		N
G.4.1	Mains transients and internal repetitive peaks .....		N
G.4.2	Transients from telecommunication networks .....		N
G.4.3	Combination of transients		N
G.4.4	Transients from cable distribution systems		N
G.5	Measurement of transient voltages (V)		N
	a) Transients from a mains supply		N
	For an a.c. mains supply		N
	For a d.c. mains supply		N
	b) Transients from a telecommunication network		N
G.6	Determination of minimum clearances .....		N
<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N
<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N
	Metal(s) used .....		—
<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		N
K.1	Making and breaking capacity		N



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Clause	Requirement + Test	Result - Remark	Verdict
K.2	Thermostat reliability; operating voltage (V) .....		N
K.3	Thermostat endurance test; operating voltage (V) ...		N
K.4	Temperature limiter endurance; operating voltage (V) .....		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation	(see appended table 5.3)	N

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

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringling signal		N
M.3.1.1	Frequency (Hz) .....		—
M.3.1.2	Voltage (V) .....		—
M.3.1.3	Cadence; time (s), voltage (V) .....		—
M.3.1.4	Single fault current (mA) .....		—
M.3.2	Tripping device and monitoring voltage .....		N
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) .....		N

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

P	ANNEX P, NORMATIVE REFERENCES		—
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		N
	a) Preferred climatic categories .....		N
	b) Maximum continuous voltage .....		N
	c) Pulse current .....		N
<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N
R.2	Reduced clearances (see 2.10.3)		N
<b>S</b>	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N
		See separate test report	—
<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		N
		See separate test report	—
<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		N
V.1	Introduction		N
V.2	TN power distribution systems		N
<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		N
W.1	Touch current from electronic circuits		N
W.1.1	Floating circuits		N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
W.2.3	Common return, connected to protective earth		N
<b>X</b>	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		N

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Clause	Requirement + Test	Result - Remark	Verdict
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N
<b>Y</b>	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		N
Y.1	Test apparatus .....		N
Y.2	Mounting of test samples .....		N
Y.3	Carbon-arc light-exposure apparatus .....		N
Y.4	Xenon-arc light exposure apparatus .....		N
<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		N
<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		N
<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		—
<b>CC</b>	<b>ANNEX CC, Evaluation of integrated circuit (IC) current limiters</b>		N
CC.1	General		N
CC.2	Test program 1.....		N
CC.3	Test program 2.....		N
<b>DD</b>	<b>ANNEX DD, Requirements for the mounting means of rack-mounted equipment</b>		N
DD.1	General		N
DD.2	Mechanical strength test, variable N.....		N
DD.3	Mechanical strength test, 250N, including end stops.....		N
DD.4	Compliance.....		N
<b>EE</b>	<b>ANNEX EE, Household and home/office document/media shredders</b>		N
EE.1	General		N
EE.2	Markings and instructions		N
	Use of markings or symbols.....		N
	Information of user instructions, maintenance and/or servicing instructions.....		N
EE.3	Inadvertent reactivation test.....		N
EE.4	Disconnection of power to hazardous moving parts:		N
	Use of markings or symbols.....		N
EE.5	Protection against hazardous moving parts		N
	Test with test finger (Figure 2A) .....		N
	Test with wedge probe (Figure EE1 and EE2) .....		N

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

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
PCB	HANNSTAR BOARD CORP	Various	V-0, 130°C	UL796	UL E89382
Plastic enclosure	Various	Various	V-1, 105°C	UL 94	UL
AC Adapter	Shenzhen Fujia Appliance Co., Ltd.	FJ-SW1203000T	Input: 100- 240V~,50/60Hz, 1.5A Max  Output:12V---, 3A	IEC/EN 60950-1: 2005 +A1:2009	TUV-RH
Li-ion Battery Pack	Various	BRT-218	7.4V, 2000mAh	IEC/EN 60950-1: 2005 +A1:2009	Test with appliance

Supplementary information:

<sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
12	0.63	3	7.4	--	--	Normal	

Supplementary information:

2.1.1.5	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: test on battery

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

--	--
--	--
--	--
supplementary information:	

<b>2.5</b>	<b>TABLE: limited power sources</b>				N
Circuit output tested:--					
Measured Uoc (V) with all load circuits disconnected:					
		I <sub>sc</sub> (A)		VA	
		Meas.	Limit	Meas.	Limit
Normal condition		--	--	--	--
Single fault: .....		--	--	--	--
Single fault: .....		--	--	--	--
Single fault: .....		--	--	--	--
supplementary information:					
Sc=Short circuit, Oc=Open circuit					

<b>2.10.2</b>	<b>Table: working voltage measurement</b>			N
Location	RMS voltage (V)	Peak voltage (V)	Comments	
--	--	--	--	
--	--	--	--	
--	--	--	--	
supplementary information:				

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						N
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Functional:--							
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
Basic/supplementary:							
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
Reinforced:--							
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
Supplementary information:							

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

<b>4.3.8</b>	<b>TABLE: Batteries</b>								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available								--	
Is it possible to install the battery in a reverse polarity position?								N	
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	2500mA	2000mA	2300mA	2000mA	--	--
Max. current during fault condition	--	--	--	2350mA	--	6.8A	--	--	--
Test results:									
- Chemical leaks								P	
- Explosion of the battery								P	
- Emission of flame or expulsion of molten metal								P	
- Electric strength tests of equipment after completion of tests								N	
Supplementary information:--									

<b>4.3.8</b>	<b>TABLE: Batteries</b>								N/A
Battery category .....: Lithium ion battery									
Manufacturer .....: --									
Type / model.....: BRT-218									
Voltage .....: 7.4V									
Capacity.....: 2000mAh									
Tested and Certified by (incl. Ref. No.) .....: --									
Circuit protection diagram:									

4.5	TABLE: Thermal requirements					P		
	Supply voltage (V) .....	12V	7.4V(Normal work powered by a full charged battery)		—			
	Ambient T <sub>min</sub> (°C) .....	26.6	26.8		—			
	Ambient T <sub>max</sub> (°C) .....	27.0	27.0		—			
Maximum measured temperature T of part/at::		T (°C)			Allowed T <sub>max</sub> (°C)			
1. PCB		48.2	66.2	37.7	55.7	130		
2. Battery body		37.1	55.1	32.4	60.4	Ref.		
4. Enclosure inside		44.5	63.5	35.0	53.0	--		
5. Enclosure outside		37.5	55.5	32.0	50.0	95		
6. Screen		36.1	54.1	31.4	59.4	95		
7. Ambient		27.0	45	27.0	45	--		
Supplementary information:--								
Temperature T of winding:		t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--		--	--	--	--	--	--	--
--		--	--	--	--	--	--	--
Supplementary information:								

4.5.5	TABLE: Ball pressure test of thermoplastic parts					N
	Allowed impression diameter (mm) .....	≤ 2 mm			—	
Part			Test temperature (°C)	Impression diameter (mm)		
--			--	--		
--			--	--		
Supplementary information:						

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Enclosure	Various	Various	0.81	V-1	UL	
PCB	HANNSTAR BOARD CORP	PCB	0.84	V-0	UL	
Supplementary information:						

5.1	TABLE: touch current measurement	N
-----	----------------------------------	---



Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
--	--	--	--
--	--	--	--
supplementary information:--			

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

5.3	TABLE: Fault condition tests					P
Ambient temperature (°C) .....		25°C			—	
Power source for EUT: Manufacturer, model/type, output rating .....		--			—	
Component No.	Fault	Supply voltage (V)	Test time	Fuse(Yes/No)	Fuse current (A)	Observation
1.U1 pin 1-6	S-C	12	30min.	No	--	No high temperature, no fire, no explosion, no abnormal appearance
2. D1	S-C	12	420min.	No	--	No high temperature, no fire, no explosion, no abnormal appearance
3. C1	S-C	12	420min.	No	--	No high temperature, no fire, no explosion, no abnormal appearance
4. Lithium ion battery	S-C	8.4	60min.	No	--	Battery is protected, no explosion, no fire, no leakage.
5. Lithium ion battery	Over-charge	8.4	4h	No	--	No high temperature, no fire, no explosion, no abnormal appearance



Supplementary information:

Photos



Fig. 1



Fig. 2



Fig. 3



Fig. 4





Fig. 5



Fig. 6



Fig. 7

==== End of Test Report ====