APPLICATION FOR R & TTE DIRECTIVE
On Behalf of

MSI Computer Europe BV
USB Bluetooth Dongle

Model: Star Key 2.0 V2 & Star Key 3.0

Prepared for : **MSI Computer Europe BV**
Science Park 5706, 5692 ER Son
P.O. Box 109, 5690 AC Son

Prepared By : **Accurate Technology Co., Ltd.**
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Date of Test: **August 11, 2007**
Date of Report: **August 14, 2007**
Report Number: **ATS2007329**

TEST REPORT

IEC 60950-1 and/or EN 60950-1

Information technology equipment – Safety –

Part 1: General requirements

Report reference No	ATS2007329	
Tested by (printed name and signature)	Helen	.....
Approved by (printed name and signature)	Sam	.....
Date of issue	August 14, 2007	
Testing Laboratory Name	Accurate Technology Co., Ltd.	
Address	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan 518057 Shenzhen, P.R. China	
Testing location	CBTL ☐ CCATL ☐ SMT ☐ TMP ☐	
Address	(Same as above)	
Applicant's Name	MSI Computer Europe BV	
Address	Science Park 5706, 5692 ER Son P.O. Box 109, 5690 AC Son	
Test specification		
Standard	☐ IEC 60950-1:2001 ☒ EN 60950-1:2001+A11:2004	
Test procedure	R & TTE approval	
Non-standard test method	N.A.	
Test Report Form No	IECEN60950_1B	
TRF originator	SGS Fimko Ltd	
Master TRF	dated 2003-03	

Test item description	USB Bluetooth Dongle
Manufacturer	Shenzhen Sanxi Technology Co., Ltd.
Model and/or type reference	Star Key 2.0 V2 & Star Key 3.0
Serial number	Pre-production samples without serial numbers
Rating(s)	USB port: DC 5V

Particulars: test item vs. test requirements

Equipment mobility .....: Moveable equipment

Operating condition .....: Continuous

Mains supply tolerance (%).....: N/A

Tested for IT power systems .....: No

IT testing, phase-phase voltage (V) .....: N/A

Class of equipment .....: Class III

Mass of equipment (g).....: 7.5g

Protection against ingress of water .....: IPX0

Test case verdicts

Test case does not apply to the test object ..: N(/A)

Test item does meet the requirement .....: P(ass)

Test item does not meet the requirement ....: F(ail)

Testing

Date of receipt of test item .....: August 11, 2007

Date(s) of performance of test .....: August 11, 2007

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

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

"(see Annex #)" refers to an annex appended to the report.

“(see appended table #)” refers to a table appended to the report.

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

Comments:

Brief description of the test sample:

The equipment was supplied by USB port of computer, USB port was considered as Limited Power Source in this report. Fire enclosures were not required, see details in clause 2.5 and 4.7 please.

Copy of marking plate(s):

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		**P**
1.5	Components		**P**
1.5.1	General	See below.	**P**
	Comply with IEC 60950 or relevant component standard	Components that were found to affect safety aspects comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards.	**P**
1.5.2	Evaluation and testing of components	Components that are certified to IEC and /or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	**P**
1.5.3	Thermal controls	No thermal controls provided.	**N**
1.5.4	Transformers	No transformer.	**N**
1.5.5	Interconnecting cables	No interconnecting cable	**N**
1.5.6	Capacitors in primary circuits ..... :	Secondary circuits only.	**N**
1.5.7	Double insulation or reinforced insulation bridged by components	No double insulation and reinforced insulation.	**N**
1.5.7.1	General	Ditto	**N**
1.5.7.2	Bridging capacitors	Ditto	**N**
1.5.7.3	Bridging resistors	Ditto	**N**
1.5.7.4	Accessible parts	Ditto	**N**
1.5.8	Components in equipment for IT power systems	Not connect to IT power system.	**N**

1.6	Power interface		**P**
1.6.1	AC power distribution systems	DC supply, SELV circuits only.	**N**
1.6.2	Input current	(see 1.7.1)	**N**
1.6.3	Voltage limit of hand-held equipment	DC 5V maximum, < 250V.	**P**
1.6.4	Neutral conductor		**N**

1.7	Marking and instructions		**P**
1.7.1	Power rating	The equipment is not provided with a means for direct connection to the AC main supply or DC main supply, it need not be marked with any electrical rating.	**N**
	Rated voltage(s) or voltage range(s) (V) ..... :	Ditto	**N**
	Symbol for nature of supply, for d.c. only ..... :	Ditto	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Rated frequency or rated frequency range (Hz) :	Ditto	**N**
	Rated current (mA or A) ..... :	Ditto	**N**
	Manufacturer's name or trademark or identification mark ..... :	Manufacturer's trademark	**P**
	Type/model or type reference..... :	Star Key 2.0 V2 & Star Key 3.0	**P**
	Symbol for Class II equipment only ..... :	Class III.	**N**
	Other symbols ..... :	Additional symbols or marking does not give rise to misunderstanding.	**P**
	Certification marks ..... :		**N**
1.7.2	Safety instructions	Safety instruction provided.	**P**
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	**N**
1.7.4	Supply voltage adjustment ..... :	No voltage setting device	**N**
	Methods and means of adjustment; reference to installation instructions ..... :		**N**
1.7.5	Power outlets on the equipment ..... :	No outlets provided.	**N**
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	No fuse provided.	**N**
1.7.7	Wiring terminals	No wiring terminals.	**N**
1.7.7.1	Protective earthing and bonding terminals ..... :		**N**
1.7.7.2	Terminal 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	See below.	**P**
1.7.8.1	Identification, location and marking ..... :	Provided LED indicator is not safety relevant.	**P**
1.7.8.2	Colours ..... :		**P**
1.7.8.3	Symbols according to IEC 60417 ..... :	No symbols used.	**N**
1.7.8.4	Markings using figures ..... :		**N**
1.7.9	Isolation of multiple power sources ..... :	Supply from computer USB port only.	**N**
1.7.10	IT power distribution systems		**N**
1.7.11	Thermostats and other regulating devices	No thermostats provided.	**N**
1.7.12	Language(s) ..... :	Rating marking is in English and safety instructions are in English. Versions in other languages will be provided when national certificate approval.	**P**
1.7.13	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 s and	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
		then again for 15 s with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling nor lifting of the label edge.	
1.7.14	Removable parts	The marking is not placed on the movable parts which can be replaced.	**P**
1.7.15	Replaceable batteries	No such batteries	**N**
	Language(s)..... :		—
1.7.16	Operator access with a tool ..... :	No operator accessible area which needs to be accessed by the use of a tool.	**N**
1.7.17	Equipment for restricted access locations..... :	Not limited for use in restricted access locations.	**N**

2	PROTECTION FROM HAZARDS		**P**
2.1	Protection from electric shock and energy hazards *SELV circuits only, no access to energized parts.*		**P**
2.1.1	Protection in operator access areas	Bare pats are SELV	**P**
2.1.1.1	Access to energized parts	SELV circuits involved only and intended to carry energy less than 240VA.	**N**
	Test by inspection ..... :		**N**
	Test with test finger ..... :		**N**
	Test with test pin ..... :		**N**
	Test with test probe ..... :	No TNV circuits.	**N**
2.1.1.2	Battery compartments ..... :	Ditto.	**N**
2.1.1.3	Access to ELV wiring	No ELV wiring	**N**
	Working voltage (Vpeak or Vrms); minimum distance (mm) through insulation	Ditto.	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage in the unit	**N**
2.1.1.5	Energy hazards ..... :	(see appended table 2.1.1.5)	**N**
2.1.1.6	Manual controls		**N**
2.1.1.7	Discharge of capacitors in equipment	Not connect to AC or DC mains supply	**N**
	Time-constant (s); measured voltage (V) ..... :	(see appended table 2.1.1.7)	—
2.1.2	Protection in service access areas	No maintenance work in operation mode necessary.	**N**
2.1.3	Protection in restricted access locations	The unit is not limited to be used in restricted access locations.	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.2	SELV circuits		**P**
2.2.1	General requirements	Checked by inspection	**P**
2.2.2	Voltages under normal conditions (V) ..... :	DC 5V	**P**
2.2.3	Voltages under fault conditions (V)..... :	DC 5V	**P**
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	SELV circuits only. No separation needed.	**P**
2.2.3.2	Separation by earthed screen (method 2)		**N**
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		**N**
2.2.4	Connection of SELV circuits to other circuits .....:	No connection to other circuits.	**N**

2.3	TNV circuits *No TNV circuits.*		**N**
2.3.1	Limits		**N**
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		**N**
	Insulation employed..... :		—
2.3.3	Separation from hazardous voltages		**N**
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		**N**
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		**N**

2.4	Limited current circuits		**N**
2.4.1	General requirements		**N**
2.4.2	Limit values	(See appended table 2.4.2).	**N**
	Frequency (Hz)..... :		—
	Measured current (mA)..... :		—
	Measured voltage (V) ..... :		—
	Measured capacitance (pF)..... :		—
2.4.3	Connection of limited current circuits to other circuits		**N**

2.5	Limited power sources		**N**
	Inherently limited output	The USB port was considered as LPS	**N**
	Impedance limited output		**N**
	Overcurrent protective device limited output		**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Regulating network limited output under normal operating and single fault condition		**N**
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		**N**
	Output voltage (V), output current (A), apparent power (VA)..... :	(See appended table 2.5)	—
	Current rating of overcurrent protective device (A)		—

2.6	Provisions for earthing and bonding		**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		**—**
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		**N**
2.6.3.3	Size of protective bonding conductors		**—**
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A) ..... :	(see appended table 2.6.3.4)	**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 and 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**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.5.8	Reliance on telecommunication network or cable distribution system	No TNV.	**N**

2.7	Overcurrent and earth fault protection in primary circuits *No primary circuits*		**N**
2.7.1	Basic requirements		**N**
	Instructions when protection relies on building installation		**N**
2.7.2	Faults not covered in 5.3		**N**
2.7.3	Short-circuit backup protection		**N**
2.7.4	Number and location of protective devices ..... :		**N**
2.7.5	Protection by several devices		**N**
2.7.6	Warning to service personnel ..... :		**N**

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

2.9	Electrical insulation		**P**
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	**P**
2.9.2	Humidity conditioning	25°C, 95% R.H. for 48 hrs	**P**
	Humidity (%) ..... :	Ditto	—
	Temperature (°C) ..... :	Ditto	—
2.9.3	Grade of insulation	Only functional insulation	**P**

2.10	Clearances, creepage distances and distances through insulation	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.1	General	Functional insulation only, method c) in 5.3.4 applied.	**N**
2.10.2	Determination of working voltage		**N**
2.10.3	Clearances	Annex G was not considered.	**N**
2.10.3.1	General		**N**
2.10.3.2	Clearances in primary circuits	No primary circuits.	**N**
2.10.3.3	Clearances in secondary circuits		**N**
2.10.3.4	Measurement of transient voltage levels		**N**
2.10.4	Creepage distances		**N**
	CTI tests..... :		—
2.10.5	Solid insulation		**N**
2.10.5.1	Minimum distance through insulation		**N**
2.10.5.2	Thin sheet material		**N**
	Number of layers (pcs) ..... :		—
	Electric strength test		—
2.10.5.3	Printed boards		**N**
	Distance through insulation		**N**
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs) ..... :		**N**
2.10.5.4	Wound components		**N**
	Number of layers (pcs) ..... :		**N**
	Two wires in contact inside wound component; angle between 45° and 90° ..... :		**N**
2.10.6	Coated printed boards	No coated printed boards.	**N**
2.10.6.1	General		**N**
2.10.6.2	Sample preparation and preliminary inspection		**N**
2.10.6.3	Thermal cycling		**N**
2.10.6.4	Thermal ageing (°C) ..... :		**N**
2.10.6.5	Electric strength test		—
2.10.6.6	Abrasion resistance test		**N**
	Electric strength test		—
2.10.7	Enclosed and sealed parts ..... :	No hermetically sealed component.	**N**
	Temperature $T_1=T_2 + T_{ma} – T_{amb}$ +10K (°C)..... :		**N**
2.10.8	Spacings filled by insulating compound..... :		**N**
	Electric strength test		—
2.10.9	Component external terminations		**N**
2.10.10	Insulation with varying dimensions		**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3	WIRING, CONNECTIONS AND SUPPLY		**N**
3.1	General		**N**
3.1.1	Current rating and overcurrent protection	No wires in the equipment	**N**
3.1.2	Protection against mechanical damage		**N**
3.1.3	Securing of internal wiring		**N**
3.1.4	Insulation of conductors		**N**
3.1.5	Beads and ceramic insulators	Not used.	**N**
3.1.6	Screws for electrical contact pressure	No any screws used for electrical connection.	**N**
3.1.7	Insulating materials in electrical connections		**N**
3.1.8	Self-tapping and spaced thread screws	No screws used for electrical connection.	**N**
3.1.9	Termination of conductors		**N**
	10 N pull test	Complied.	**N**
3.1.10	Sleeving on wiring	No sleeving	**N**
3.2	Connection to an a.c. mains supply or a d.c. mains supply *Not connected to a.c. mains supply and d.c. mains supply.*		**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 (mm) of cable and conduits ..... :		—
3.2.4	Appliance inlets		**N**
3.2.5	Power supply cords		**N**
3.2.5.1	AC power supply cords		**N**
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords		**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**
	D (mm); test mass (g) ..... :		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Radius of curvature of cord (mm) ..... :		—
3.2.9	Supply wiring space		**N**

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

3.4	Disconnection from the mains supply		**N**
3.4.1	General requirement	No connection to mains supply.	**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	Single-phase equipment and d.c. equipment		**N**
3.4.7	Three-phase equipment		**N**
3.4.8	Switches as disconnect devices		**N**
3.4.9	Plugs as disconnect devices		**N**
3.4.10	Interconnected equipment		**N**
3.4.11	Multiple power sources		**N**

3.5	Interconnection of equipment		**N**
3.5.1	General requirements	No interconnection circuits	**N**
3.5.2	Types of interconnection circuits .....:		**N**
3.5.3	ELV circuits as interconnection circuits		**N**

4	PHYSICAL REQUIREMENTS	**P**
4.1	Stability	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Angle of 10°	Plugged into USB port directly	**N**
	Test: force (N).....:	Not floor standing equipment.	**N**

4.2	Mechanical strength		**P**
4.2.1	General	See below. No hazards found.	**P**
4.2.2	Steady force test, 10 N	10 N applied to all components other than enclosure.	**P**
4.2.3	Steady force test, 30 N		**N**
4.2.4	Steady force test, 250 N	250 N applied to outer enclosure. No energy or other hazards.	**P**
4.2.5	Impact test	See 4.2.6	**N**
	Fall test		**N**
	Swing test		**N**
4.2.6	Drop test	Dropped from the height of 1000 mm onto hardwood at least 13mm thick, three times dropped, no hazard.	**P**
4.2.7	Stress relief test	Complete equipment has been put into chamber at 70°C for 7h.	**P**
4.2.8	Cathode ray tubes	No CRT provided.	**N**
	Picture tube separately certified ..... :	Ditto.	**N**
4.2.9	High pressure lamps	No high pressure lamps provided.	**N**
4.2.10	Wall or ceiling mounted equipment; force (N) ... :	Not wall or ceiling mounted equipment.	**N**

4.3	Design and construction		**P**
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	**P**
4.3.2	Handles and manual controls; force (N)..... :	No such devices	**N**
4.3.3	Adjustable controls		**N**
4.3.4	Securing of parts	No such securing of parts	**N**
4.3.5	Connection of plugs and sockets	No hazard	**P**
4.3.6	Direct plug-in equipment	Not such equipment	**N**
	Dimensions (mm) of mains plug for direct plug-in ..... :		**N**
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)..... :		**N**
4.3.7	Heating elements in earthed equipment	No heating elements provided.	**N**
4.3.8	Batteries	No batteries	**N**
4.3.9	Oil and grease	No oil or grease provided.	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	**N**
4.3.11	Containers for liquids or gases	No container for liquids or gases provided.	**N**
4.3.12	Flammable liquids.....:	No flammable liquids provided.	**N**
	Quantity of liquid (l).....:		**N**
	Flash point (°C).....:		**N**
4.3.13	Radiation; type of radiation .....:	See below.	**P**
4.3.13.1	General	No risk due to radiation.	**P**
4.3.13.2	Ionizing radiation		**N**
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		**N**
	Part, property, retention after test, flammability classification .....:		**N**
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:		**N**
4.3.13.5	Laser (including LEDs)	LED	**P**
	Laser class .....:	Class 1.	—
4.3.13.6	Other types .....:	No other types of radiation.	**N**

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

4.5	Thermal requirements		**P**
4.5.1	Maximum temperatures	(See appended table 4.5.1)	**P**
	Normal load condition per Annex L ..... :	(See annex L)	**P**
4.5.2	Resistance to abnormal heat	No thermoplastic material at hazardous voltage	**N**

4.6	Openings in enclosures		**P**
4.6.1	Top and side openings	No top or side openings.	**P**
	Dimensions (mm) ..... :		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.6.2	Bottoms of fire enclosures	No need of fire enclosure (See cl. 4.7.2.2)	**N**
	Construction of the bottom ..... :		—
4.6.3	Doors or covers in fire enclosures		**N**
4.6.4	Openings in transportable equipment		**N**
4.6.5	Adhesives for constructional purposes	Not secured with adhesives.	**N**
	Conditioning temperature (°C)/time (weeks) ..... :		—

4.7	Resistance to fire		**P**
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes.	**P**
	Method 1, selection and application of components wiring and materials	Components are selected with	**P**
	Method 2, application of all of simulated fault condition tests		**N**
4.7.2	Conditions for a fire enclosure	See below.	**P**
4.7.2.1	Parts requiring a fire enclosure		**N**
4.7.2.2	Parts not requiring a fire enclosure	Supplied by LPS, mounted on PCB of V-1 or better grade.	**P**
4.7.3	Materials		**P**
4.7.3.1	General	Enclosure passed 550°C glow wire test. PCB rated accordingly. See appended table 1.5.1 for details.	**P**
4.7.3.2	Materials for fire enclosures		**N**
4.7.3.3	Materials for components and other parts outside fire enclosures		**N**
4.7.3.4	Materials for components and other parts inside fire enclosures		**N**
4.7.3.5	Materials for air filter assemblies	No air filter assemblies	**N**
4.7.3.6	Materials used in high-voltage components	No high voltage components.	**N**

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		**P**
5.1	Touch current and protective conductor current		**N**
5.1.1	General	No connection to AC mains supply, SELV circuits only	**N**
5.1.2	Equipment under test (EUT)		**N**
5.1.3	Test circuit		**N**
5.1.4	Application of measuring instrument	Using measuring instrument in annex D.	**N**
5.1.5	Test procedure		**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.1.6	Test measurements	(See appended table 5.1.6).	**N**
	Test 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**
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	No TNV.	**N**
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		**N**
	Test voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks .....:	No TNV.	**N**

5.2	Electric strength		**P**
5.2.1	General	(see appended table 5.2)	**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	SELV only, HB or better grade enclosure used and no user accessible hazardous parts.	**P**
5.3.2	Motors	No motors.	**N**
5.3.3	Transformers	No transformers.	**N**
5.3.4	Functional insulation.....:	For internal circuits, method c) applied. Short-circuits applied also. See appended table 5.3 Other functional insulation, method b) applied. See appended table 5.2.	**P**
5.3.5	Electromechanical components	No electromechanical component provided.	**N**
5.3.6	Simulation of faults	(See appended table 5.3).	**P**
5.3.7	Unattended equipment	None of them are used.	**N**
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire propagated beyond the equipment. No molten metal was emitted.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6	CONNECTION TO TELECOMMUNICATION NETWORKS		**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		**N**
	Test voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions..... :		**N**
6.2	Protection of equipment users from overvoltages on telecommunication networks		**N**
6.2.1	Separation requirements		**N**
6.2.2	Electric strength test procedure		**N**
6.2.2.1	Impulse test		**N**
6.2.2.2	Steady-state test		**N**
6.2.2.3	Compliance criteria		**N**
6.3	Protection of the telecommunication wiring system from overheating		**N**
	Max. output current (A)..... :		—
	Current limiting method ..... :		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		**N**
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		**N**
7.2	Protection of equipment users from overvoltages on the cable distribution system		**N**
7.3	Insulation between primary circuits and cable distribution systems		**N**
7.3.1	General		**N**
7.3.2	Voltage surge test		**N**
7.3.3	Impulse test		**N**
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		**N**
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		**N**
A.1.1	Samples..... :		—
	Wall thickness (mm) ..... :		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
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		**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 60695-2-2, cl. 4 and 8		**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	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		**N**
B.1	General requirements		**N**
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
B.2	Test conditions		**N**
B.3	Maximum temperatures		**N**
B.4	Running overload test		**N**
B.5	Locked-rotor overload test		**N**
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	Running overload test for d.c. motors in secondary circuits		**N**
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		
B.7.1	Test procedure		**N**
B.7.2	Alternative test procedure; test time (h) .....:		**N**
B.7.3	Electric strength test		**N**
B.8	Test for motors with capacitors		**N**
B.9	Test for three-phase motors		**N**
B.10	Test for series motors		**N**
	Operating voltage (V) .....:		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		**N**
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
	Method of protection ..... :		—
C.1	Overload test		**N**
C.2	Insulation		**N**
	Protection from displacement of windings..... :		**N**

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

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

F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)	**N**

G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.1	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	DC mains supply		**N**
G.3	Determination of telecommunication network transient voltage (V)..... :		**N**
G.4	Determination of required withstand voltage (V) :		**N**
G.5	Measurement of transient levels (V)..... :		**N**
G.6	Determination of minimum clearances ..... :		**N**

H	ANNEX H, IONIZING RADIATION (see 4.3.13)	**N**

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

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		**N**
K.1	Making and breaking capacity		**N**
K.2	Thermostat reliability; operating voltage (V)..... :		**N**
K.3	Thermostat endurance test; operating voltage (V) ..... :		**N**
K.4	Temperature limiter endurance; operating voltage (V) ..... :		**N**
K.5	Thermal cut-out reliability		**N**
K.6	Stability of operation		**N**

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		**P**
L.1	Typewriters		**N**
L.2	Adding machines and cash registers		**N**
L.3	Erasers		**N**
L.4	Pencil sharpeners		**N**
L.5	Duplicators and copy machines		**N**
L.6	Motor-operated files		**N**
L.7	Other business equipment	Continuous operation	**P**

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**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
M.3.1	Ringing signal		**N**
M.3.1.1	Frequency (Hz) ..... :		—
M.3.1.2	Voltage (V) ..... :		—
M.3.1.3	Cadence; time (s), voltage (V) ..... :		—
M.3.1.4	Single fault current (mA)..... :		—
M.3.2	Tripping device and monitoring voltage..... :		**N**
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		**N**
M.3.2.2	Tripping device		**N**
M.3.2.3	Monitoring voltage (V) ..... :		**N**

N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 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	**P**

Q	ANNEX Q, BIBLIOGRAPHY	**N**

R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		**N**
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		**N**
R.2	Reduced clearances (see 2.10.3)		**N**

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

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

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

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

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

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

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

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001, Annex ZB and Annex ZC)			
General	C: Delete all the "country" notes in the reference document according to the following list: 1.1.5 Note 2 1.5.8 Note 2 1.6.1 Note 1.7.2 Note 4 1.7.12 Note 2 2.6 Note 2.2.3 Note 2.2.4 Note 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2 2.3.4 Note 2,3 2.7.1 Note 2.10.3.1 Note 4 3.2.1.1 Note 3.2.3 Note 1, 2 3.2.5.1 Note 2 4.3.6 Note 1,2 4.7.2.2 Note 4.7.3.1 Note 2 6.1.2.1 Note 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7 Note 4 7.1 Note G2.1 Note 1, 2 Annex H Note 2	Deleted.	**P**
1.2.4.1	S (DK): Certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		**N**
1.5.1	A (SE, Ordinance 1990:944 and CH, Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury): Add NOTE – Switches containing mercury such as thermostats, relays and level controllers are not allowed.	Not such switch.	**N**
1.5.8	S (NO): Due to the IT power system used (see annex V, Fig. V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		**N**
1.7.2	S (FI, NO, SE): 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:		**N**
	FI: "Laite on liitettävä suojamaadoitus-koskettimilla varustettuun pistorasiaan"		**N**
	NO: "Apparatet må tilkoples jordet stikkontakt"		**N**
	SE: "Apparaten skall anslutas till jordat uttag"		**N**
	A (DK, Heavy Current Regulations): Supply cords of class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  If essential for the safety of the equipment, the tag must in addition be provided with a diagram which shows the connection of the other		**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende instalationsvejledning."		
1.7.5	S (DK): 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.	No socket-outlets.	**N**
1.7.5	A (DK, Heavy Current Regulations): CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	No socket-outlet.	**N**
1.7.12	A (DE, Gesetz über techische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheits-gesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10th January 1996, article 2, 4th paragraph item 2): Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.		**N**
1.7.15	A (CH, Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.		**N**
	A (DE, Regulation on protection against hazards by X-ray, of 8th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4): a) A licence is required by those who operate an X-ray emission source. b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if 1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated and ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. c) A licence in accordance with Cl. 1 is also not	No X-ray emission.	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT.		
2.2.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	No TNV circuit.	**N**
2.3.2	S (NO): Requirements according to this annex, 6.1.2.1 apply.	No TNV circuit.	**N**
2.3.3 and 2.3.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	No TNV circuit.	**N**
2.6.3.3	S (GB): The current rating of the circuit shall be taken as 13 A, not 16 A.		**N**
2.7.1	C: 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-	Replaced.	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		
	S (GB): To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT OF DIRECT PLUG-IN EQUIPMENT, protective device shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.		**N**
2.7.2	C: Void.		**N**
2.10.2	C: Replace in the first line "(see also 1.4.7)" by "(see also 1.4.8)".	Replaced.	**N**
2.10.3.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage and will remain at 230 V in case of a single earth fault	Not applied for.	**N**
3.2.1.1	S (CH): 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 10A. 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**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	S (DK): 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 ply-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**
	S (ES): 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**
	S (GB): 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 Socket 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**
	S (IE): 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**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.3	C: Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.	Deleted.	**N**
3.2.5.1	C: Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 0,75[1)] Over 6 up to and including 10 (0,75)[2)] 1,0 Over 10 up to and including 16 (1,0)[3)] 1,5 In the Conditions applicable to Table 3B delete the words "in some countries" in condition [1)]. In Note 1, applicable to Table 3B, delete the second sentence.	Replaced.	**N**
3.2.5.1	S (GB): A power supply cord with conductor of 1,25 mm^2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.		**N**
3.3.4	C: In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: "Over 10 up to and including 16 Delete the fifth line: conductor sizes for 13 to 16 A.	Deleted.	**N**
3.3.4	S (GB): The range of conductor sizes of flexible cords to be accepted by terminals for equipment with A RATED CURRENT of over 10 A up to and including 13 A is: - 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		**N**
4.3.6	S (GB): The torque test is performed using a socket outlet complying with BS 1363 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, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C.	Not applied for.	**N**
	S (IE): 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.	Not applied for.	**N**
4.3.13.6	C: Add the following note: NOTE Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this recommendation are currently under development.	Replaced.	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6.1.2.1	S (FI, NO, SE): Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES AND CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV), and - is subject to ROUTINGE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950:2000, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.	No TNV circuit.	**N**
6.1.2.2	S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and 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.	No TNV circuit.	**N**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
7.1	S (FI, NO, SE): Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		**N**
G.2.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.	The alternative method is not used.	**N**
Annex H	C: 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.	Replaced.	**N**
Annex P	C: Replace the text of this annex by: See annex ZA.	Replaced.	**P**
Annex Q	C: Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures – Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		**N**
Annex ZA	C: Normative references to international publications with their relevant European publications This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referrd to applies (including amendments). NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies. — IEC 60050-151 — IEC 60050-195 EN 60065:1998 + corr. June 1999 IEC 60065 (mod):1998 EN 60073:1996 IEC 60073:1996 HD 566 S1:1990 IEC 60085:1984 HD 214 S2:1980 IEC 60112:1979 HD 611.4.1.S1:1992 IEC 60216-4-1:1990 HD 21 1) Series IEC 60227 (mod) Series HD 22 2) Series IEC 60245 (mod) Series EN 60309 Series IEC 60309 Series EN 60317-43:1997 IEC 60317-43:1997 EN 60320 Series IEC 60320 (mod) Series		**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	HD 384.3 S2:1995	IEC 60364-3 (mod):1993	
	HD 384.4.41 S2:1996	IEC 60364-4-41 (mod):1992 3)	
	EN 132400:1994 4) + A2:1998 + A3:1998 + A4:2001	IEC 60384-14:1993	
	EN 60417-1	IEC 60417-1	
	HD 625.1 S1:1996 + corr. Nov. 1996	IEC 60664-1 (mod):1992	
	EN 60695-2-2:1994	IEC 60695-2-2:1991	
	EN 60695-2-11:2001	IEC 60695-2-11:2000	
	—	IEC 60695-2-20:1995	
	—	IEC 60695-10-2:1995	
	—	IEC 60695-11-3:2000	
	—	IEC 60695-11-4:2000	
	EN 60695-11-10:1999	IEC 60695-11-10:1999	
	EN 60695-11-20:1999	IEC 60695-11-20:1999	
	EN 60730-1:2000	IEC 60730-1:1999 (mod)	
	EN 60825-1:1994 + corr. Febr. 1995 + A11:1996 + corr. July 1997	IEC 60825-1:1993	
	EN 60825-2:2000	IEC 60825-2:2000	
	—	IEC 60825-9:1999	
	EN 60851-3:1996	IEC 60851-3:1996	
	EN 60851-5:1996	IEC 60825-5:1996	
	EN 60851-6:1996	IEC 60851-6:1996	
	—	IEC 60885-1:1987	
	EN 60990:1999	IEC 60990:1999	
	—	IEC 61058-1:2000	
	EN 61965:2001	IEC 61965:2000	
	EN ISO 178:1996	ISO 178:1993	
	EN ISO 179 Series	ISO 179 Series	
	EN ISO 180:2000	ISO 180:1993	
	—	ISO 261:1998	
	—	ISO 262:1998	
	EN ISO 527 Series	ISO 527 Series	
	—	ISO 386:1984	
	EN ISO 4892 Series	ISO 4892 Series	
	—	ISO 7000:1989	
	EN ISO 8256:1996	ISO 8256:1990	
	—	ISO 9772:1994	
	EN ISO 9773:1998	ISO 9773:1998	
	—	ITU-T:1988 Recommendation K.17	
	—	ITU-T:2000 Recommendation K.21	
	1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		

1.5.1	TABLE: list of critical components				**P**
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity [1.]
Enclosure	(Various)	(Various)	HB or better, passed 550°C glow wire test.	--	Test in appliance
PCB	(Various)	(Various)	V-1, 105°C or better.	UL 94	UL
Notes: 1. An asterisk indicates a mark that assures the agreed level of surveillance.					

1.6.2	TABLE: electrical data (in normal conditions)					**N**
Fuse #	Irated (mA)	U (V)	P (W)	I (mA)	Ifuse (mA)	Condition/status
--	--	--	--	--	--	--
--	--	--	--	--	--	--
Note:						

2.1.1.5	TABLE: max. V, A, VA test			**N**
Voltage (rated) (V)	Current (rated) (mA)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
Note: USB port and batteries considered as LPS, energy level far less than 240VA.				

2.1.1.7	TABLE: discharge test				**N**
Condition	τ calculated (s)	τ measured (s)	t u$\rightarrow$ 0V (s)	Comments	
L-N (fuse in; switch)			--	Vo= , 37% Vo=	
L-N (fuse out; switch)			--	Vo= , 37% Vo=	
Notes: Input voltage: Overall capacity: C = μF Discharge resistor: R = kΩ					

2.2.2	TABLE: Hazardous voltage measurement			**N**
Transformer	Location	max. Voltage		Voltage Limitation Component
		V peak	V d.c.	
		--		
Note:				

2.2.3	TABLE: SEL Voltage measurement	**N**

Location	Voltage measured (V)	Comments
Note:		

2.4.2	TABLE: limited current circuit measurement					**N**
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments	
Notes: Input voltage: The peak drop voltage was measured with an oscilloscope at a 2kΩ non-inductive resistor. Bridge Capacitor:						

2.5	TABLE: limited power source measurement		**N**
	Limits	Measured	Verdict
According to Table 2B (normal condition) measured at , Uoc= V			
current (in A)			
apparent power (in VA)			
According to Table 2B (abnormal condition) measured at , Uoc= V			
current (in A)			
apparent power (in VA)			
Note:			

2.6.3.3	TABLE: ground continue test	**N**
Location	Resistance measured (mΩ)	Comments
Note: Test current= 25A or 40A		

2.10.2	Table: working voltage measurement		**N**
Location	RMS voltage (V)	Peak voltage (V)	Comments
Note:			

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					**N**
Clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
Notes:						

2.10.5	TABLE: distance through insulation measurements			N
Distance through insulation di at/of:	U r.m.s. (V)	Test voltage (V)	Required di (mm)	di (mm)
Note:				

4.5.1	TABLE: maximum temperatures			P
	test voltage (V) ..... :	DC5V		—
	t1 (°C) ..... :	25.0		—
	t2 (°C) ..... :	25.0		—
Maximum temperature T of part/at:		T (°C)	allowed T_{max} (°C)	
PCB		27.8	105	
Enclosure		26.6	95	

Temperature T of winding:	R_1 (Ω)	R_2 (Ω)	T (°C)	allowed T_{max} (°C)	insulation class

Notes:

The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as described above.

Max. ambient temperature is 25°C, for no declaration from the manufacturer.

4.5.2	TABLE: ball pressure test of thermoplastic parts		N
	allowed impression diameter (mm) :	≤ 2 mm	—
Part		Test temperature (°C)	Impression diameter (mm)
Note:			

5.1.6	TABLE: touch current measurement				N
Condition	L→ terminal A (mA)	N → terminal A (mA)	Limit (mA)	Comments	
Notes:					

5.2	TABLE: electric strength tests and impulse tests		P
Test voltage applied between:		Test voltage (V)	Breakdown
USB port and enclosure wrapped with metal foil		AC 500	No

Note:

5.3	TABLE: fault condition tests						**P**
	ambient temperature (°C) .....:			25°C			—
No.	Component no.	Fault	Test voltage (V)	Test time	Fuse no.	Fuse current (A)	Result
1	D1	s-c	5V	1min	--	--	Can't work, no hazard occurred
2	C1	s-c	5V	1min	--	--	Can't work, no hazard occurred
Supplementary information							
Notes: ▪ In fault column, where s-c = short-circuited, o-c = open-circuited, o-l=overloaded.							

Appendix 1
Equipment List

No	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
1	Hybrid Recorder	Yokogawa	DR130	27D216293	2007.1.3	2008.1.2
2	Hybrid Recorder	Yokogawa	DR130	27D216294	2007.1.3	2008.1.2
3	Data Acquisition / Switch Unit	Agilent	34970A	MY41027365	2007.1.3	2008.1.2
4	Data Acquisition / Switch Unit	Agilent	34970A	MY41025924	2007.1.3	2008.1.2
5	Temp. & Humid. Chamber	Gongwen	HSD-500	0109	2007.1.3	2008.1.2
6	Oven Chamber	Rongfeng	101A-3	900875	2007.1.3	2008.1.2
7	AC/DC Electronic Load	Wei Bo	DL3311A	180961	2007.1.3	2008.1.2
8	AC/DC Electronic Load	Wei Bo	DL3311A	180964	2007.1.3	2008.1.2
9	AC/DC Electronic Load	Wei Bo	DL3311A	181892	2007.1.3	2008.1.2
10	AC/DC Electronic Load	Wei Bo	DL3311A	182399	2007.1.3	2008.1.2
11	DC Electronic Load	Wei Bo	DL3320A	180553	2007.1.3	2008.1.2
12	DC Electronic Load	Wei Bo	DL3320A	183557	2007.1.3	2008.1.2
13	Oscilloscope	Tektronix	TDS2012	C035606	2007.1.3	2008.1.2
14	Oscilloscope	Tektronix	TDS3012B	B035855	2007.1.3	2008.1.2
15	Digital Power Meter	Qingzhi	8716C	870307119	2007.1.3	2008.1.2
16	Digital Power Meter	Airo	8715B	038710069	2007.1.3	2008.1.2
17	Digital Power Meter	Everfine	YF9901	405075	2007.1.3	2008.1.2
18	Ohm Meter	Yang Zi	YD2511	794	2007.1.3	2008.1.2
19	Multi Meter	Fluke	111	85150263	2007.1.3	2008.1.2
20	Multi Meter	Fluke	111	80150223	2007.1.3	2008.1.2
21	Desktop Multi Meter	Good Will	GDM-8245	E900535	2007.1.3	2008.1.2
22	Desktop Multi Meter	Fluke	45	8392013	2007.1.3	2008.1.2
23	Desktop Multi Meter	Good Will	GDM-8245	E830573	2007.1.3	2008.1.2
24	Desktop Multi Meter	Good Will	GDM-8245	E830574	2007.1.3	2008.1.2
25	Hi-Pot Tester	Ainuo	9604	039609405	2007.1.3	2008.1.2
26	Grounding Bond Meter	Ainuo	9613B	039606212	2007.1.3	2008.1.2
27	Leakage Current Meter	EXTECH	7611	1330308	2007.1.3	2008.1.2
28	Touch Current Meter	EPRE	400C	0402A05	2007.1.3	2008.1.2
29	Insulation Resistance Tester	Yang Zhi	YD2683	030	2007.1.3	2008.1.2
30	Digital Power Meter	Qingzhi	8716C	870307126	2007.1.3	2008.1.2
31	Electronic Scale	Heng Tong	J3S5	18514	2007.1.3	2008.1.2
32	Push-Pull Scale	Japan Instrumentation	NK-300	49779	2007.1.3	2008.1.2
33	Test Hook	Zhilitong	TH-1	W8L180T1	2007.1.3	2008.1.2
34	Digital Caliper	Guang Lu	03000002	27452	2007.1.3	2008.1.2
35	Digital Caliper	Guang Lu	03000002	27460	2007.1.3	2008.1.2
36	Electronic Thermo-Hygrometer	Oregon	JB913R	06A03-4101	2007.1.3	2008.1.2
39	Goniometer	Wenzhou	JZC-B2	15032	2007.1.4	2008.1.3
40	Tumbling Barrel	Zhilitong	GT-1	G010104	2007.1.4	2008.1.3
41	Audio Generator	Good Will	GAG-810	D913311	2007.1.4	2008.1.3
42	Noise Generator	DM	DM8898	D826715	2007.1.4	2008.1.3

Equipment List

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
43	Plug Torque Tester	Zhilitong	LJ-1	LJ010104	2007.1.4	2008.1.3
44	Shot Test Pin Probe	Zhilitong	ZP-1	44	2007.1.4	2008.1.3
45	Test Thorn Probe	Zhilitiong	ZT-1	D30L80	2007.1.4	2008.1.3
46	Finger Nail Probe	Zhilitong	ZJ-1	D14N30	2007.1.4	2008.1.3
47	Test Finger Probe	Zhilitong	ZF-1	47	2007.1.4	2008.1.3
48	Accessibility Probe	Zhilitong	ZA-1	48	2007.1.4	2008.1.3
49	UL Finger Probe	America	ULP-01	49	2007.1.4	2008.1.3
50	Rigid Finger Probe	Zhilitong	TZ-1	L010304	2007.1.4	2008.1.3
51	Test Probe	Zhilitong	TZ-11	D4L100	2007.1.4	2008.1.3
52	Test Probe	Zhilitong	TZ-12	D3L100	2007.1.4	2008.1.3
53	Test Probe	Zhilitong	TZ-13	D1L20	2007.1.4	2008.1.3
54	Test Probe	Zhilitong	TZ-14	D40	2007.1.4	2008.1.3
55	Steel Ball	Zhilitong	ZB-1	D50W500	2007.1.4	2008.1.3
56	Ball Pressure Tester	Guangdong Zhijian	BPT	24001	2007.1.4	2008.1.3
57	Ball Pressure Tester	Guangdong Zhijian	BPT	24002	2007.1.4	2008.1.3
58	DC Power Supply	All Power	IP50-20D	401024	———	———
59	DC Power Supply	Chuang Hong	CPS-5030D	04021101	———	———
60	Isolating Transformer	Kong Tel	5KVA	002	———	———
61	Hammer	Guangdong Zhijian	CJ-2	24003	2007.1.26	2008.1.25
62	Hammer	Zhilitong	CJ-2	C021204	2007.1.9	2008.1.8
63	Hammer	Guangdong Zhijian	CJ-2	24004	2007.1.17	2008.1.16
64	Hammer	Zhilitong	CJ-2	C021104	2007.1.9	2008.1.8
65	Torque Driver	Kanon	30LTDK	04C175	2007.1.4	2008.1.3
66	Torque Driver	Kanon	12LTDK	04A037	2007.1.4	2008.1.3
67	AC Voltage Stabilizer	Sanke Electrical	SVC-30KVA	31208433081	———	———
68	AC Voltage Stabilizer	Sanke Electrical	SVC-30KVA	31208455481	———	———
69	Frequency Converter Power Supply	All Power	AFC-220	890411	———	———
70	Frequency Converter Power Supply	NewG Power	Ng-3120a	04454	———	———
71	Digital Clamp Meter	CEM	DT-9701	ATCS-71	2007.1.4	2008.1.3
72	High-voltage Digital Voltage Meter	Yang Zi	YD1940	101	2007.1.4	2008.1.3
73	High-voltage Passive Probe	TEXAS	HVP3011	ATCS-73	2007.1.4	2008.1.3
74	DC Power Supply	Manson	SIM-9106	350400004	———	———
75	Tape line	Great Wall	GW-589E	18955	2007.1.4	2008.1.3
76	Platform Scale	Shanghai	TGT-100	526	2007.1.4	2008.1.3
77	Timer	CATIGA	CG-512	AT24H	2007.1.4	2008.1.3
78	Digital Power Meter	Qingzhi	8716C	870512009	2007.1.4	2008.1.3
79	Digital Power Meter	Qingzhi	8716C	870512012	2007.1.4	2008.1.3
80	Digital Power Meter	Everfine	PF9805	301020	2007.1.4	2008.1.3
81	Digital Power Meter	IDRC	CP-280	280887	2007.1.4	2008.1.3
82	Data Acquisition / Switch Unit	Agilent	34970A	MY44008068	2007.1.4	2008.1.3
83	Glow Wire Test Set	Zhilitong	GTR-B	R024007	2007.5.21	2008.5.20
84	Needle Flame Test Set	Zhilitong	ZY-2	Y021507	2007.5.21	2008.5.20

Appendix 2
Photo documentation

Photo 1

View:

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[ ] rear

[ ] right side

[ ] left side

[√] top

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[ ] internal

Photo 2

View:

[ ] front

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Photo documentation

Photo 3

View:

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Photo 4

View:

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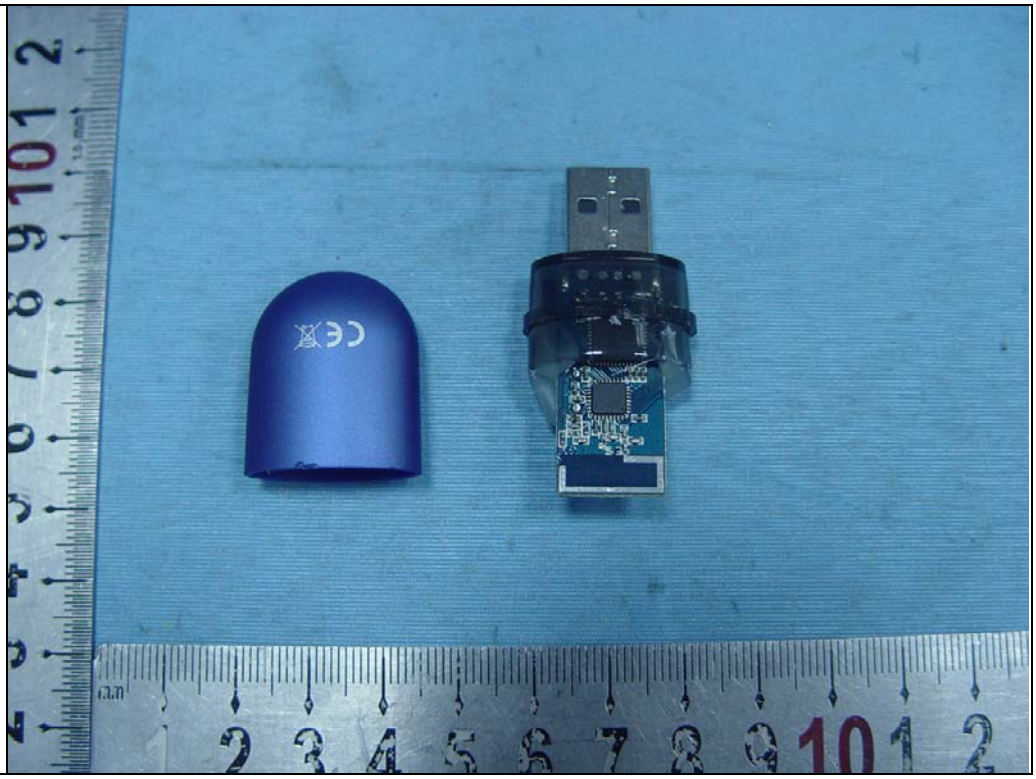

Photo documentation

Photo 5

View:

[ ] front

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[√] internal

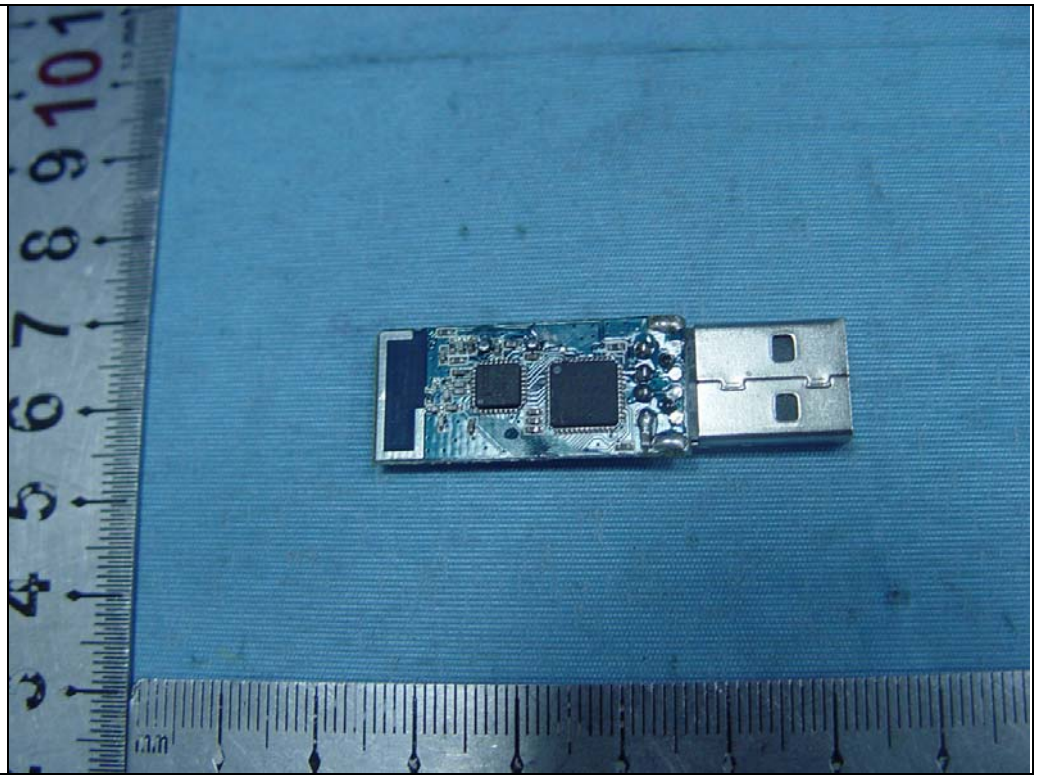

Photo 6

View:

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